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THE UNIVERSITY OF ALBERTA

THE RELATIONSHIP BETWEEN YOUNG CHILDREN'S DRAWING AND WRITING

by

© TENA SIEBENGA

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH IN
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MASTER OF EDUCATION

1987

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "The Relationship Between Young Children's Drawing and Writing" submitted by Tena Siebenga in partial fulfilment of the requirements for the degree of Master of Education.

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October 2, 1987

FOR
MOM AND DAD

ABSTRACT

Young children, using a variety of instruments, produce scribbles of various kinds on different writing surfaces. Gradually children consistently use a writing instrument on paper.

The data for the study consisted of one hundred nineteen samples of drawing and writing, as well as field notes and transcripts of conversation acquired from six four year old children during the production of the samples. The study examined the questions: what is the nature of the similarities and differences in the way children go about "doing" drawing and writing, what knowledge do young children have of the nature of drawing and writing, and at what point and in what manner do children differentiate between drawing and writing?

As participant observer, the researcher interacted with the individual children as marks were made on paper with colored markers. The resulting case studies indicated: children enjoyed exploring the possibilities of the writing instrument, were clear as to the intended use of the markers, revealed some of their thinking about their "drawing" and "writing" by the talk directed to themselves or the researcher, indicated that they were serious about their task, considered the process they were involved in more important than the final product, viewed "mistakes" as a stepping stone to further learning or a mark to be

eradicated, and indicated a good sense of how to use the space available. Using their background knowledge, the child experimented making the marks on paper, thereby discovering more about the mode of communication.

Young children have a knowledge of the nature of writing and drawing. They understood that: marks on paper represented something beyond themselves, writing followed a conventional form whereas drawing did not, letters had a name; that a letter or group of letters stood for their own name, another person's name, or a message, and writing was something adults did whereas children most often drew or made letters.

Young children differentiate between writing and drawing using their knowlege of recognizable alphabet forms. A strong emphasis placed on what children already know will lead to educational programs which more closely meet the needs of the children and capitalize on their relentless love for learning.

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Chapter One

Overview

This chapter introduces the study in the context of the learning of young children and the research related to their learning in the areas of writing and drawing. The clarification of the problem, the purpose of the study, the limitations and significance of the study are presented. The concluding section outlines the organization of the study.

Introduction

One of the basic aims of the language arts program is to teach writing. But the acquisition of knowledge and competency in making marks on paper begins long before the child enters formal schooling and is faced with the task of writing.

The following are excerpts from the observation transcripts of five year old Tim and four year old Jason.

R: I want you to write for me.
T: Like what?
R: Anything.
T: Mmm, like pictures?
I write. I mostly write pictures and my name and letters.
R: Which is your picture, your drawing?
Pointing, Tim identifies them correctly.
T: Are they the same, drawing and writing?
Tim shaking his head replies, 'No?' 'Yes.'
Then more convincingly, 'Yes, they are. Yeah, they are but they're a bit different.'

Tim understood there was a difference between drawing and writing and clarified the difference by saying that one was letters while the other was pictures. When given one sample of drawing and another of a squiggle, Jason identified the drawing and pointing to the squiggle said, "You can even call this writing".

> The relationship between the child's drawing and his handwriting is very complex. At first the child makes no distinction between samples of drawing and writing by adults, but by the age of 3 or 4 he is usually aware that these are two separable activities. He will speak of 'making a picture' or of 'writing something'. It generally takes a few more years , however, before the child understands the communicative function of handwriting and the fact that it relates explicitly to spoken language (Gardner, 1973, p. 221).

An examination of the drawings produced by children of two and three year olds reveal marks or scribbles on the page. Similarily, children's early writing displays some of the same markings or squiggles. By the time children enter school they usually understand the difference between writing and drawing. A transformation has taken place. There has been an acquisition of knowledge whereby the children know that the markings they are producing at age five and six, carry greater significance than did the markings produced at age two. As children go about expressing themselves in drawing and writing there appears to be a similarity in the way they "put their pencil to paper" as well as their use of both as a means of communication.

Clarification of Problem

The elementary language arts curriculum promotes a strong writing program as one of the strands involved in the integration of a young child's language learning. Far too often learning that has taken place prior to formal schooling is not fully acknowledged. Harste, Woodward and Burke (1984) cite an example of Alison, who having been a written language user and producer from the age of three, entered a very skill-centered first grade reading and writing program. By November she announced amid tears, "But I can't write anymore!" (p. 161). That appears to be the plight of other children as well. Recognition is not given for what children already know and, therefore, some students go through a period at the beginning of first grade where they are stifled and not stimulated to continue their natural mode of written communication and learning.

Most children beginning in their first or second year of life engage in the activity of scribbling, whether it be on the walls of their bedrooms or on paper provided for them. The continual practice and experimentation provides them with a knowledge base and an avenue for communication. Prior to age five their most favored avenue of communication other than talking is drawing but gradually this evolves to incorporate graphic forms which resemble writing. This study investigates the similarities and differences in the two modes of communication in order to facilitate continuity in children's learning not only during their kindergarten year, but also as they enter grade one.

Research by Richardson (1948), Kellogg (1970), Lowenfeld and Brittain (1975), and Gardner (1980) have given insight into the drawing of pre-school and school age children. The work of researchers such as James Britton (1970), Donald Graves (1978), and Haste, Woodward and Burke (1984) have led the way for educators in seeing the need to focus on the process of writing. Many of the studies were conducted with school age children. Clay (1975) however, worked with kindergarten children and developed a set of principles which were common to the writing of many children. Howard Gardner (1973) in his seminal study posited the interaction of symbol systems such as drawing, everyday language and music (p. 61). Until recently very little research has been conducted to examine this inter-relationship. Harste, Woodward, and Burke (1984) have examined the symbolizing activities of young children (age three) as one aspect of their research dealing with the acquisition of literacy and found patterns evident in the process. Ann Dyson-Haas, beginning in 1981, conducted a series of studies with kindergarten children in order to study the inter-relationships involved in writing and drawing processes. Lamme and Childers (1983), during the same period of time, were conducting their study of children two and a half to four years of age in a group setting. They noted the progression as well as the interrelationship in writing and drawing.

The present study which investigated the activities of children four years of age who had not yet been enrolled in a kindergarten program may provide further information, thus extending the body of knowledge which seeks to understand young children's representations on paper.

The Purpose

The purpose of the present study was to examine the symbolizing by young children through the medium that adults indicate to be writing or drawing. The study aimed to uncover some of the background knowledge children have about these avenues of communication prior to entering formal schooling.

Research Questions

The following research questions were addressed in the study.

1. What is the nature of the similarities and differences in the way young children go about "doing" drawing and writing?

2. What knowledge does the young child have about the nature of drawing or writing?

3. At what point and in what manner do children differentiate between drawing and writing?

Limitations of the Study

The study was limited to a small sample (six children) observed over a short period of time. Not all occasions for interaction proved productive. Although the children met together for their first session the remaining sessions involved only one child and the researcher. The lack of familiarity with the researcher and the presence of the audiotape may have adversely affected the children in the initial stages. The children were observed on an individual basis and therefore did not benefit directly from social interaction with their peers.

Significance of the Study

Until recently there were very few studies which investigated the learning process of young children from what is considered by adults as the transition made from art to writing or letter making. Some studies were conducted with children of kindergarten age; whereas, this study focused on younger children. The findings of this study should serve to extend the growing body of knowledge regarding the processes of "making of marks" and children's understanding of "drawing and writing". The findings provide information on the background knowledge children have acquired prior to formal schooling. Educators of pre-school and first grade children may find the conclusions useful as they plan reading and writing activities for their students. Art teachers could profit from the exploration done in the research, and from the individual artistic development and verbalization accompanying the process. Parents of preschool children may also gain understanding of their children during the transition from drawing to writing.

Organization of the Study

Chapter 1 presents the problem in the context of the research on the drawing and writing of young children. The purpose of the study as well as the limitations and possible significance are outlined.

Chapter 11 presents a review of the literature pertinent to the study. The chapter is divided into five sections. Because the study is based on Howard Gardner's assumption that there is a relationship between symbol systems, an introduction of his work is presented first. This is followed by a section about children and their drawing which includes research dealing with the stages of drawing, the meaning of scribbles, and the process of art activity. The third section; children and their writing, includes a review of research pertaining to the stages of writing and the patterns found in the writing process. Research centered on the interrelationships of writing and drawing comprises the fourth section. A summary concludes the chapter.

Chapter III presents the design and procedure used to gather the data for the study. A report of the pilot study is also included.

In chapter IV each of the six case studies is presented and summarized. Chapter V presents a summary of the analysis and the findings of the study.

Chapter VI includes a summary of the study, a discussion of the findings, implications for instruction and possibilities for continued research.

Chapter Two

Review of Literature

Overview

This chapter will review the literature relevant to the investigation of the relationship between children's writing and drawing. Included will be writings discussing the theoretical background important to this study as well as research related to both the writing and drawing of young children. The first section of the chapter will relate Howard Gardner's background and understanding of child development, as well as his interpretation of symbol development. The next section, dealing with research related to young children's drawing, will be followed by a section regarding research related to their writing. A review of the research focusing on the interrelationships involved in both writing and drawing comprises the next section. A summary concludes the chapter.

Howard Gardner devoted many years to the study of human creative processes especially as they relate to the arts. His desire to gain insight into creative processes and products is basic to the numerous studies and projects he conducted.

Background to the Work of Howard Gardner

Howard Gardner was influenced by various scholars such as psychologist Jean Piaget and anthropologist Claude Levi-Strauss. These men were involved in the study of the human mind. By combining the understanding gleaned from Piaget and Levi-Strauss with that of philosophers Ernst Cassirer, Suzanne Langer and Nelson Goodman, Gardner developed a framework for his studies. The philosophers embraced a symbolic approach to the arts and provided insight in how to conduct a psychological study of the artistic process. Studies by Ernst Gombrich, an art historian, provided a basis for comparing the symbol systems.

From Jean Piaget Gardner gained his views of child development as well as methods of inquiry (Gardner, 1982, xiii). The work of Jean Piaget in the 1920's and 1930's opened the door to understanding child development. His observation of children from age one through ten led to the identification of four major stages of child development: sensori-motor (birth to eighteen months of age); preoperational consisting of preconceptual (eighteen months to four years of age) and intuitive (four to seven years of age); the concrete operational (age seven to adolescence); and formal operational (adolescence to adulthood) (Beard, 1969, p.15). Gardner believed the image of thought that motivated Piaget was an active, exploring child systematically seeking solutions to a puzzle until he ultimately hit upon the right one, and then moved on to a more challenging puzzle (Gardner, 1982, p.19).

Piaget's contemporary, Claude Levi-Strauss, claimed that children's minds operated in ways fundamentally similiar to those of an adult and considered language as a model for all matter of sign systems. Levi-Strauss acknowledged the importance of symbolic activity in human experience and revealed a special attraction to issues of artistic invention (Gardner, 1982, p.39).

Although Gardner was able to build on the work of Piaget and Levi-Strauss, he believed they did not recognize that "the basic unit of human thought is the symbol, and that the basic entities with which humans operate in a meaningful context are symbol systems" (Gardner, 1982, p. 39).

Philosophers Ernst Cassirer and Suzanne Langer studied the importance of symbolic form. For Cassirer symbols were not simply tools or mechanisms of thought but

> were the functioning of thought itself, vital forms of activity, our sole ways of 'making' reality and synthesizing the world... In the process of symbolic activity human beings inevitably engage in meaning-making, in imaginative problem-solving, and in equally creative problem production (Gardner, 1982, p.44).

He recognized that art provided a rich image of reality and offered a profound insight into its formal structure. He valued spontaneous original work in which man fully explored his own universe (Gardner, 1982, p.45). Building upon the work of Cassirer, Suzanne Langer believed there was a basic and pervasive human need to symbolize, to invent meaning, and to invest meanings in one's world. It was a property of the human mind to search for and to find significance everywhere, to transform experience constantly to uncover new meanings (Gardner, 1982, p. 50). Langer distinguished two kinds of symbolism as discursive and presentational. The discursive involved the expression of ideas in words or other kinds of "languages", whereas, presentational involved the expression of an idea by a picture (Gardner, 1982, p.51).

Nelson Goodman's philosophy of art built upon a recognition of types of symbols and how symbols functioned. He devoted special attention to the types of symbols such as notation, language and painting which could exemplify denotational, literal, metaphoric or expressive properties. Whether symbols function as artistic symbols depends on which of the properties of the symbol one attends to. He provided a way of judging one's view of reality within each creative domain (Gardner, 1982, p.64).

Ernst Gombrich, an art historian, studied the development of realism in art. His assessment of realism was based on an interplay of several factors such as composition, details of texture and expressiveness. Gardner believed this means of analysing art could also be extended to other art forms such as music.

In conclusion, Gardner combined his understanding of the human mind with the understanding and development of symbols and symbol systems to give background to his own work. The work of Gombrich provided the partial basis for examining development across symbol systems.

Gardner's Understanding of the Development of the Symbol System

Building on the preceeding philosophical background and his work with Goodman on Project Zero at Harvard University, Howard Gardner concluded that from the age of two to seven the child comes to know and to master the various symbol systems of his culture.

> But language is by no means the only (and in many cases, not even the most important) route for making sense of the world. Children learn to use symbols, ranging from gestures of the hand or movements of the whole body through pictures, figures of clay, numbers, music, and the like (Gardner, 1982, p. 87-88).

In Gardner's recent book Frames of Mind (1983) a symbol is defined as "an entity (material or abstract) that can denote or refer to any other entity". Therefore, by this definition, words, pictures, diagrams, numbers, and many other entities are readily considered symbols providing they are used and interpreted as representing some kind of information.

> Symbols can function alone as meaningful entities; but very commonly, they enter as components or elements in a more highly elaborated system...And a considerable range of meaning can be effectively conveyed when entire symbolic systems are used; mastering the deployment and the interpretation (the 'reading' and the 'writing') of such symbol systems constitutes a major task for every growing child (Gardner, 1983, p. 301).

According to Gardner the symbolic development during the preschool years entails four stages: basic understanding, streams, waves and channels. During infancy the child aquires certain basic understandings on which later symbols can be built. Using skills and abilities such as sucking and looking the child comes to know the world. He understands that events have consequences and that there are catagories for subjects. The child can carry out operations specific to each intellectual domain. There is an initial understanding of number, of the use of space, and of vocal pitch and tonal sequences. There is also evidence of interaction and combination of intelligences in the child's ablility to appreciate the meaning of a single spoken word and the eventual ability to "read" the pictorial depiction of objects.

From age two to five there is incredible growth in which the child requires basic competency in a range of symbol systems. The child becomes able to appreciate and create language, two-dimensional symbolization (pictures), three dimensional symbolization (clay and blocks), gestural symbolization (dance), music, drama and certain kinds of mathematical and logical understanding (Gardner, 1983, p.305).

There are "streams" of progression meaning that the development that occurs is unique to each particular system. A progression may occur within language and have little ramification on another system, such as music.

"Waves" of symbolization also occur, meaning that the development starts in one particular realm, but by its very nature, spreads rapidly and even inappropriately to other symbolic domains (Gardner,1983, p.307). The normal way for a two year old to indicate that an action has been carried out is through words or "pretend" play. When a child transforms a marker into a truck and recreates the accompanying sounds and motions, the structure of the role and the event have taken over. The second wave, which occurs at approximately three years of age, is analogical or topological mapping. The child's use of the symbol captures within the actual symbol some relations originally observed in the field of reference that he is symbolizing. So for the first time in drawing, the child is able to extend appendages from the base of a circle and call the resulting form a "person". In the following wave which occurs around the age of four, the child is intent on getting a number of elements in an array precisely correct. The child will no longer settle for rough estimations of what is believed to be correct. The number of toes on a foot must be correct (Gardner,1983, p. 306-309).

> Having negotiated the three waves during the period when the individual streams of development continues to unfold in several symbolic domains, the child of five indeed has attained a first-draft knowledge of numerous symbolic products ... The child is able to express himself freely without undue critical apprehension and has no commitment to producing just what others have fashioned. He is willing to transcend boundaries, to link domains, to effect unusual juxtaposition - in short, to exhibit some of the experimentation and flavorfulness that we associate with the mature artist. It is a heady time" (Gardner, 1983, p 309).

From the age of five through seven the child becomes capable of "notational symbolization" - the capacity to invent or use various notational systems which refer to basic symbol systems of a given culture. Written language refers to spoken language. Written numerical system refer to the spoken (or otherwise symbolized) numbers. Maps, diagrams, musical or dance notational systems each represent their own specific symbolic display. Once the child becomes involved in the world of notations, the mastery of the new symbol system and the ability to use it in the prescribed way within the culture, it becomes all important and much of the adventure of previous discovery is lost. This codifying of information that has evolved within a given culture is referred to as "channels" of symbolization. Gardner's most recent research varifies his earlier study (1976) in which he stated that a fixed order of immersion among various symbol systems differed widely across children (p.25). He was repeatedly struck by "the intimate yet generally ignored links between the child's drawing and the rest of his bargaining powers" (Gardner, 1980. p.14).

In summary, by assimilating the work of researchers in the area of child development and philosophy, Howard Gardner defines a symbol as an entity (material or abstract) that can stand for another entity and can function alone or as part of a symbol system. There are times when the development of the various symbol systems overlap giving way to amplified creativity. From the age of two to seven the child's capacity "to use, manipulate, transform, and comprehend various symbols matures at a ferocious pace" (Gardner, 1982, p.212). This has implications for the present study. Children at this age are busily engaged in drawing and writing. This study seeks to study the relationship between the two symbol systems by examining the similarities and differences in the way children go about "doing" drawing and writing.

Children and Their Drawing

Stages of Drawing

Marian Richardson (1948), working with both students and teachers in England in the 1930's, emphasized the artistic design in writing patterns. She worked with elementary school children to develop patterns in both manuscript and cursive writing. She believed the painting of pictures and writing should "go on side by side from the beginning" (Richardson, 1948, p.58). She also believed that even though an adult may consider a child's representation a mere scribble, the child saw it as perfectly clear and complete. Harris (1963), Kellogg (1969) Lowenfeld and Brittain (1975) and Brittain (1979), through the examination of children's drawings categorized them in terms of the stages children go through in order to produce them. Harris (1963) observed broad stages in which drawing seemed to fulfill different pyschological functions. The very early stages indicated that the primary pleasure came from making marks on paper. In the imitative and reproductive drawing stage greater attention was given to detail and organization as the child progressively attained the concepts necessary to depict the human figure. The third phase involved the use of graphic elements according to the learned techniques and principles of design in order to produce an esthetically pleasing effect which would communicate to others (p. 229). Harris believed a social and educational setting which placed considerable importance on drawing was important to the development of graphic ability (p. 235).

Rhoda Kellogg compiled a large collection of children's pre-school drawings and established eight catagories for this "gestalt" or art form. ~~The~~ eight catagories are as follows. (a) Twenty kinds of markings comprise the "basic scribbles" made by children two years old and younger. They show variations of muscular tension that do not require visual guidance. Among these are a vertical, horizontal or diagonal lines, a curved line, a zig-zagged line, and an open or closed curve. (b) The "placement patterns" of two year olds and younger are the earliest evidence of controlled shaping such as circles, rectangles or triangles. (c) The "shape" stages produced by children of two to three years of age contain emergent diagrams as well as "combines" and "aggregates" of the diagrams of single lines employed to form crosses, circles, triangles and other shapes. (d) The "mandala", a combination of a circle or square divided into quarters by a Greek cross, was considered the key to the sequence that led from abstract work to pictorials. Its conformity with the movement of the child's arm, its perfect symmetry, its patent resemblance to so many objects in the world, and the relative ease of repeating the form all contribute to its special status (Gardner, 1980, p.43). (e) The "sun" is a very simple structure and yet it did not appear until the child has drawn complex aggregates. (f) The "radial" is a formation in which lines radiate from a point or small area. (g) The child combines the "scribble" and "diagrams" to give the appearance of a "human". (h) The last group was "early pictorials" which were grouped as animals, buildings, vegetation and transportation (Kellogg, 1969). Although the extensive catagorization depicts all the conceivable markings produced, other researchers have chosen to group art according to the stages of art development.

Lowenfeld and Brittain (1975) and Brittain (1979) referred to the initial random marks made by young children as the first part of the scribbling stage. Sometime before the age of four the child engages in the controlled scribbling stage where he watches carefully what he draws. Enjoyment at this stage stimulates the child to vary his motions. The lines may be repeated or drawn with great vigor. The lines which may be drawn horizontally, vertically or in circles often fill the page. During the next stage, the preschematic stage, the child makes his first representational attempts. The drawing of children often evolves from an undefined collection of lines into a definite representational configuration. The circular and longitudinal motions become recognizable forms. The first form which typically is a person is drawn with a circle for a head and two lines for the legs. During this stage the child's representational symbols for objects such as houses, trees and humans are constantly changing. Brittain indicated that at this time the child begins to name his scribbles. The intent of the drawing may not be clear when he begins to draw but often connotes some meaning and allows him to convey this meaning to his audience (Brittain, 1979 p.30). According to Lowenfeld and Brittain the next stage was the schematic stage in which the child developed a definite form concept where the drawings symbolize parts of the environment in a descriptive way. By this age the child has established a schema of the real object. The mental image a child has of the objects in the environment are used in his thinking process; the drawing we see on the page is a symbol of the mental image, the object standing for the object (Lowenfeld and Brittain, 1975, p.185). To some extent the products of the schematic stages may possess less freedom than those of the earlier stages because the child is trying to organize and see relationships in his environment.

Eisner (1976) also catagorized children's artistic development in stages. Believing that the most striking feature of children's art is the stages through which they pass, he catagorized them as function-pleasure, pictograph, representational, and aesthetic-expressive. In the first stage, "function - pleasure", materials are manipulated for the child's own satisfaction. During the "pictograph" the simplified, flat, two - dimensional shapes signify, through their rough equivalance to the objects of the world, those objects themselves. This stage represented two kinds of intellectual achievement (a) the realization that visual materials can be used to create visual forms which convey an idea and (b) the sophisticated invention on the child's part through which his ideas can be embodied in a public form. At the age of nine or ten, children going through the representational stage try to find a more adequate repertoire of skills to enable them to create pictures. During this stage the child usually senses dissatisfaction with his own efforts and asks for assistance in order to make the illustration "right". The child may want to know how to make the road disappear into the background, how to make a chimney look "right", or how to make a house conform to the rules of perspective. The "aesthetic - expressive" stage begins during early adolescence. Only a small percentage of children acquire the skill necessary to fully realize this stage. "What is significant in the creation of art, aside from significant insight and idea, is the ability to create forms that, in fact, express in non-verbal ways what cannot be conveyed in any other way" (p. 11).

In summary, the study of children's drawings have produced evidence that children go through a series of stages. The initial scribbling stage is one on which Rhoda Kellogg has concentrated her study and arrived at the establishment of eight catagories. The artistic stages beginning with the earliest markings are labelled by Lowenfeld and Brittain as scribbling, preschematic and schematic. Eisner refers to these same phases as function-pleasure, pictograph, representational and aesthetic-expressive.

The Meaning of Early Symbolization

Gardner (1980), saw eighteen month old Jerry's scribble as an achievement because he was able to make a mark on the page. Pondering Jerry's scribbles of twenty three months of age, Gardner concluded that it is from "apparently casual but actually event-filled sessions that the messy and wayward scribbles of early drawings give way to the control of geometric form, the achievement of representational depiction, and the precision of faithful likenesses"(p. 25). Although Jerry was not aware of it, he was engaged in setting direction, planning and problem solving as he tried to master the symbol system. A month after his second birthday Jerry worked for two weeks on a jagged line in an attempt to copy adult cursive script. At twenty six months Jerry sucessfully drew "faces" and was aware of what his circles represented.

Based on a detailed longitudinal study of his own three children and cross-sectional studies of children birth to seven years of age, Matthews (1984) maintained that children's experimentation during the "scribbling" stage built on "a substratum of symbolizations which are as much to do with movement and time as they are with configuration" (p.37). The child's first drawing represented an understanding of body movement through space. Representation of other bodies and objects followed. Drawing, assimilated with play, became the phenomena around which symbolism of different modes develops and alternates (p.37).

Yardley states that in spite of the complexity of the use of symbols, children rarely confuse the various classes of symbols even before they understand them (1970, p.36). Right from the early recognition of symbols children begin to discriminate between the kinds of symbols which represent words, numbers, notes, road-signs and songs. Once they are familiar with symbols, they are very anxious to use and interpret them. Children enjoy playing with symbols and speculating about their meaning. They are free to interpret them and the meaning they attach at this stage is their own personal decision (Yardley, 1970, p. 51-52).

In summary, scribbles, which are considered the earliest form of symbolization, are viewed as meaningful representations growing out of a need to communicate and are built upon movement and play.

Process of Art Activity

Some researchers in the study of children's art believe that children are self taught and function best without the interference of an adult. Kellogg indicated that the child "has difficulty accommodating his self taught formation to the conventions of language symbols (including numerals, printed letters and cursive letters, both upper and lower case, as well as lines found in the drawings that parents and teachers make for children to copy...) (Kellogg, 1969, p.255 - 256). She also saw children's art as an integration of movement and vision, the perception of over-all shapes and the perception of details, familiar line formation and new ones, stimulation and reaction, esthetic pleasure and muscular satisfaction. To be effective art must be experienced through one's own muscles, those of the hand as well as those of the eye (Kellogg, p. 265). Hill(1966) saw in the young child's activity a quality of magic. The first function of drawing is precommunication: to sharpen perception, to clarify it and to give it an ordered form (p.26).

Jacqueline Goodnow (1977), in her book Children's Drawing, shows that children's drawings indicate general aspects of development and skill as well as the nature of thought and problem solving among children and adults (p.2). In collaboration with other researchers (Freidman, Bernbaun and Lehman) she studied children's drawings and concluded: (a) Children are thrifty in their use of units (a particular kind of circle, sun shape or type of human figure) as they realize many items can be represented by a single symbol. (b) When children make change they are usually conservative. Typically, a change in meaning will be carried, especially among young children, by varying only one unit. (c) Parts are related to one another according to specific principles such as space, axis and boundaries. Children go through great efforts to avoid having parts of the representation overlap another part. (d) Parts are related to one another in a sequence. Each step that is taken in any graphic work has consequences for later steps involved. (e) Children's graphic work illustrates their thinking and ours. Graphic work is truly "visible thinking". Uncovering the principles that link parts of any graphic work helps adults see children's efforts as a careful application of the rules they use rather than as errors made (Goodman, 1977, p.144). Willatts' study (1977) (cited by Taunton) compared his subject's use of drawing and language systems and found "drawing, far from being a mechanical process is, particularily for young children, an active, creative, problem solving activity in which the child invents successively more complex and abstract rule systems for the concepts which he wishes to communicate" (Taunton, 1984, p.58).

Lowenfeld and Brittain (1975) indicated that art was a natural form of learning. There is a need to represent parts of the environment that the child has come in contact with, a need to put down thoughts, to clarify the relationship and a need to express feelings in a tangible way (p.57). Brittain (1979) concluded that without the constant contact and interaction with the environment, a child loses the stimulation and references upon which both visual and verbal learning grow (p. 69). When the scribble no longer presented a challenge, the relationship between the symbol and the object became more important, thus enhancing the possibility for cognitive growth (p. 71). He notes that the art of drawing —

> seems to be an occasion in itself, and the child is engaged in the process rather than in producing a product recognizable to an adult... Each child is unique in what he brings to the activity - his complex understandings, his purposes, his reactions to the process of self-expression (p. 21).

As early as the age of three years most children indicate basic compositional qualities and aesthetic awareness by showing a high degree of awareness of space, filling in particular areas, balance on the sheet of paper, and a stabilized line quality (p.53). A study by Harter (1974) (cited by Brittain) indicated that maximum gratification was derived from solving challenging problems, whereas easily-solved problems provided relatively little pleasure (p.198). Brittain maintained producing art is an activity which encompasses all of the senses, each creating new forms that are constantly altered through an interactive process thereby constituting learning (1979, p.198).

Smith (1983) concluded that children are developmentally tuned to deliberate exploration of new phenomena, and this innate and powerful focusing provides their work with logic and order (p.32). Children's early intentional symbols are often modification or combinations of designs they have been making previously (p46). The study of development in children's painting shows that their paintings were based on but a few ideas and that their ability to organize them grew slowly. The images conveyed emotions and strove for unity (p.11).

In summary, art is seen by some as a natural form of learning. Taunton (1984) most clearly sums up the findings when quoting Willatts, "Drawing, far from being a mechanical process is ... an active, creative, problem solving activity in which the child invents sucessively more complex and abstract rule systems for the concepts he wishes to communicate" (p. 58).

Children and Their Early Writing

Stages of Writing

Hildreth's (1936) study of children from age three to six charted the sequential development of their writing from the scribbling stage to units which closely resembled actual letters. She concluded that "writing" improves during these years without parental involvement. King and Rental (1979) indicate that Wheeler came to a similar conclusion in working with kindergarten children. Given samples of writing, word cards and the alphabet along with their notebooks the children were told to do their writing. The progression was from designs to pictures, to letters, words in isolation, phrases, words in sentences and finally to symbols. Wheeler concluded that children improved over the year by spontaneous self-correction and self motivation (p.243-244).

Baghban (1984) in observing the stages or levels of her daughter's writing found them to correspond favorably to the research of Hildreth (1936). These stages were unorganized scribbles, scribbles with vertical and horizontal tendencies, consistent linearity, a variety of unbroken structures and units with real or approximation of real letters (p.86).

Clay (1975) developed a detailed analysis of young children's early writing. In observing the writing of five-year-old children, she noted several principles and concepts.

1. The sign concept. Marks are made on the paper for a purpose. These marks may stand for a variety of things depending on what was on the child's mind.
2. The message concept. The sign has meaning for the child who realizes that messages and words can be written and have meaning for the readers.
3. Copying principle. The child copied what the teacher wrote, knowing that it carried a message, but was unable to relay it's precise meaning.
4. Flexibility. The child created a variety of new symbols by repositioning or decorating the standard form.
5. Inventory principle. The child made lists or catagories of similar things.
6. Generating principle. Messages are generated by using letters over and over or in alternating patterns.
7. Directionality - The letters proceeded from left to right and from top to bottom.
8. Reversal of directional pattern.

9. Contrastive principle. The child showed the contrast in drawing by setting shapes beside each other.
10. Space concept. This developed slowly but the child indicated where one word ended and another began.
11. Page and book arrangement. The child made sure the message fit into the available space.
12. Abbreviation principle. The child realized one symbol may stand for an entire word or message.

Utilizing Clay's principles, Isaacs (1981) studied the preschool writing of three girls finding that they engaged in pre-school literary activities and exhibited many of these principles. Much of what they produced resulted from their desire and/or need to simply learn and explore.

Donald Graves (1978), through a year long study, found that writing was neglected or not taking place in the classrooms. Factors influencing this were the high priority given to reading in American elementary education and the lack of good role models. In an extensive two year study of sixteen children, Graves found that during the beginning stages of writing, children controlled their writing through drawing and speaking as they wrote, and in discussing the writing with friends and the teacher. They wrote for the sake of writing. They enjoyed putting marks on paper and their composing behavior was playlike in nature. The decision to write, the composing and the completion of a selection sometimes occured in the space of ten to fifteen minutes (Walshe, 1981, p. 23.) Developing Graves ideas, Giacobbe (1981) conducted a study of the writing of six-year-old children. She found not only that they felt they could write but also that development of ideas and revision of information occurred as part of the writing process (Graves, 1983, p. 110-114, 175-176). Working with the twenty-four six-year-olds in her classroom, Shirley Haley-James (1982) found that children were ready to write when they understood what writing did, when they were interested in writing, when they wanted to communicate through writing, and when they understood that written symbols represented meaning (1982, p. 462).

In summary, Clay's principles such as sign, message, flexibility, or directionality have been utilized to examine samples of writing of preschool children. The work of Donald Graves promoted the examination of the process of writing as well as the product. This led to a concentration of experimentation and revision in the process of writing.

Patterns in the Writing Process

Harste, Woodward, and Burke (1984), in their intensive study of children age four to six, were able to identify eight major patterns in their research to highlight key psycholinguistic and sociolinguistic processes involved in literacy and literacy learning. These patterns were:

1. Organization- Children's written language responses were found to be organized pragmatically, semantically, syntactically, and graphophonemically. The organizational decisions which children made in spelling reflected sensitivity, concern, and an attempt to orchestrate structures and principles of our written system. The child may have attempted to write taking into consideration the meaning of the word in context, mapping sounds to graphemes, representing sounds by letter names and place holding syllables with single of double graphemes.
2. Intentionality-The child made the assumption that markings on paper had the power to signify meaning. The questions, "What does this say?" or "What did I write?" indicated that the child were aware that the markings should have the power to signify meaning.
3. Generativeness- Language was an open system which permited the maintenance and generation of meaning. Language as a sign could sign different things to different people, or even different things to the same person on different occasions. Children, when asked to read what they have written, may have read

something differently the second time as compared to the first reading.

4. Risk-taking- Without risk there could be no exploration or discovery of the generative possibilities of literacy. Writing allowed the mind an opportunity to do what it considered exciting - to think about, attend to and record the new - while permitting opportunity to revisit, reflect, and orchestrate the new discoveries with the known.
5. Social Action- Interaction with others involving all the expressions of language was an integral part of the language learning process.
6. Context- The contextual rules of language use reflected themselves in the semantic, syntactic, and graphophonemic systems of language. A child may have used the word "planes" in telling a story and was likely to use "airplanes" in the written version.
7. Text- The search for unity within the evolving text and past texts created psychological tensions which propelled the reading and self-correcting process, the writing and revision process, and the learning process more generally. The young child understood that there was some correspondence between the sound of the word and the length of its written form.

8. Demonstrations- Through encountering demonstrations of literacy the language learner came to perceive the organizational patterns and signifying structures involved in written language and what it is they were to make of them (Harste, et al., p. 190-195).

Using the work of Harste et al as a basis, Judith Newman (1984) reported on a case study of six year old Shawn. This demonstrated the interconnectedness of intention, organization, experimentation, and orchestration in the writing process. Risk-taking was an integral aspect of experimentation as the child tried to find appropriate punctuation and spelling. By orchestration, Newman refers to the process whereby the child deals with all facets of language at once. The child

> considers the social, situational aspects of creating a piece of writing at the same time as she deals with decisions about meaning, spelling, grammar and punctuation...[There is a] complex juggling of pragmatic, semantic, syntactic and graphophonic aspects all at the same time (p. 4).

In conclusion, these studies indicated that patterns such as organization, intentionality, experimentation, and demonstration work together in the process of writing in order to allow the child to produce a finished written product.

The Interrelationships Involved in Writing and Drawing

In trying to understand the early writing of children various links in avenues of communication have been made. James Britton (1970) encouraged the education system to draw upon the learning of children prior to school entry.

> We can no longer regard school learning as simply an interim phase, a period of instruction and apprenticeship that marks the change from immaturity to maturity, from play in the nursery to work in the world. School learning must both build upon the learning of infancy and foster something that will continue and evolve throughout adult life (p. 129).

Based on the observation of his son and many other preschool children, Gardner (1980) stated that their drawings indicated the basic building blocks of a graphic language (a vocabulary of lines and forms) combined into meaningful, referential units (p.11).

Rhoda Kellogg concurred that all capital letters of the English alphabet except G, Q, R, and Y were spontaneously drawn by young children as art gestalts (Kellogg, 1973, p.8). The gestalts of children's art may coincide with other gestalt systems but the child may have difficulty accomodating the self taught formations to conventions of language symbols such as numerals, printed and cursive writing or lines found in drawings that parents or teachers make for children to copy (Kellogg, 1969 p.255). Baghban (1984), in a longitudinal case study of her own daughter concluded that "Ghiti's drawing and writing understandings are related to each other and to the development of her thought processes and her verbal abilities as manifested in her oral language" (p.90). The oral language learning strategies (sampling, guessing, labeling, associating, confirming, catagorizing, generalizing, accomodating, and assimilating) which Ghiti applied to learning to read, were also applied to written language situations (p.91). Her experience with the rhymes and songs she had learned orally helped her locate them in books. As her experience broadened, she used the books to help her catagorize and label items and events in her environment. Oral language also supported Giti's early writing. She sang as she scribbled and later initiated a waitress-game as a situation in which talking and writing were complementary. Book-babbling demonstrated her understanding that what she had written was meaningful and could be read. Her writing and drawing were reproductions of letters, objects, and people she perceived, and she used her oral language to label them. Her activities demonstrated the simultaneous involvement in the learning of oral language, reading and writing (p. 97).

Similarly King and Rentel (1979) argued that children learn to write as a natural extension of their desires to communicate to themselves and others what they know and are learning. They hypothesize, discover, invent, correct and approximate the distinctive convention of writing. "Major clues to their discoveries and hypothesis may be found in the way they transverse the territory between talk and writing" (p. 251-252).

In one of a series of studies Haas Dyson (1981) explored this connection with forty-nine kindergarten children, observing them daily in two separate three month studies. She concluded "talk is an integral part of beginning to write, providing both meaning and, for some children, the systematic means for getting the meaning on paper" (p. 783). Realizing there is no one root to writing, both the pencil and the voice provide tools to early writing.

Piazza and Tomlinson (1985) in a year long investigation of a kindergarten class, confirmed that writing was rooted in language. Talk among peers created an immediate interested audience, allowed for exchange of invented spelling, and thereby created meaning in the writing. It allowed children to naturally experience the recursiveness of writing-the on going process of generating, clarifying and elaborating ideas (p. 157-158).

The work of Howard Gardner (1973) viewed human development in terms of three simple systems: making, perceiving, and feeling, and saw an increasing interaction among the symbol systems . "Presented with a new (symbolic) medium children employed their old technolgy (looking and perceiving about the world with a freeness of feeling) to produce impressive results" (Gardner, p. 176). Although Gardner (1976) states that a fixed order of immersions among various symbol systems is unlikely, the mastery of individual symbol systems differ widely across children (p. 25).

Studies by Chomsky (1972), Gentrey (1981), Giacobbe (1981) and Dyson and Jensen (1981) found that a trusting atmosphere encouraged the experimentation of the child's own knowledge of letters and sounds in the writing process.

Differentiation of Writing and Drawing

A group of three children, two and a half to four years of age, were studied by Lamme and Childers (1983) in order to examine their composing processes. They found that in their artwork all three children moved from primarily doing scribbles to primarily drawing representational figures. In their writing they progressed from scribbling, through mock writing, practicing alphabet letters, copying letters and words, to writing independently at least a few words during the six month study. Isolated alphabet letters appeared in their compositions as letters discovered in their drawings or as alphabet letters in isolation by design. The children made distinctions between the form and function of print.

Alphabet letters and mock letters fell into the catagory of handwriting. Children "made" them and seldom read them as communiation. Words, on the other hand, were "written" and read. Compositions which produced a personal message followed a pattern: dictation, writing, drawing, and sharing of the completed project. They planned as they wrote and drew, and similarily revised as they wrote and drew.

A case study investigation of five kindergarten children out of the class of twenty-two allowed Haas Dyson (1982) "to describe not only the observed relationships between drawing and writing but also the children's expressed differentiation between these two symbol producing activities" (p. 360). She found that the children themselves did not differentiate when they were involved in the process but did understand in the context of adult writing, that they could write primarily their names and the letters of the alphabet. Writing appeared to have several meanings which overlapped those of drawing: to graphically symbolize a concrete entity, to create a graphic object for another, and to graphically represent a narrative (p. 378). The study's findings imply

> that the process of learning to write is, in part, a process of differentiating and consolidating the separate meanings of two forms of graphic symbolism, drawing and writing, as children encounter them in their daily activities... Contrary to popular belief, writing may not be speech written down. The differentiation of writing from drawing and its precise

> connection with language is not necessarily a step preceeding, but a gradual process occuring during and through first attempts to represent experience through letter graphics (p. 379).

Harste et al. (1984) stated that there has been a long history of separating reading from writing, speaking from writing, art from writing, and reading, writing, speaking, and listening from each other. This was unfortunate because language is a multimodel event as is language learning (p.37). Observations of children in experimental situations who are asked to write may gesture, act out, draw or speak in order to fulfill the task. One example was three-year-old Latrice who moved from writing to art, back to writing and again to art. Harste et al. considers this as a keep-going process strategy used by many, if not all, good writers. Text production is not print production per se, but rather, an orchestrated set of multimodel cues carefully set forth in an attempt to placehold and potentially sign one's meaning (p.35).

Harste et al. also found that all children by the age of three differentiated between writing and drawing. Some children used circles for writing and a linear up and down stroke for art, but whichever marking form they selected, the decision was consistant, systematic, and rational (p.33). These children made a clearer distinction between art and writing when they were asked to draw first and then write, than they did when the tasks were reversed. The researchers cited their 1981 study in which they found that if a three year old was given a pen and asked to write without first engaging in drawing, about twenty five per cent of all three year olds drew rather than wrote. Even though their first inclination was to draw, children at three knew that usually pens were used for writing and crayons for drawing. Harste et al. concluded that there was a dynamic transaction between context of situation, pragmatics and cognitive processing in a natural language situation and the child reading these complex clue systems used them to reach an orchestrated decision (1984, p.34).

In summary, studies of young children revealed that there is a possible interrelationship between the processes of writing and drawing since both grew out of the child's ability to use language as a communication tool. Language symbols such as numerals and printed or written lines were found in both art and writing. Similar thought processes and strategies such as hypothesizing, inventing and correcting are used in both. Although there may be similarities in the process, the children at a young age are able to differentiate between the form and function of writing and drawing. An atmosphere where trust is encouraged served to promote both activities.

Summary

The purpose of this chapter was to review the literature relevent to this study. The studies of Howard Gardner were pivotal to the study because of his belief that there are connections among the symbol systems. Although the stages through which the children progress in art and writing eventually differentiate, there are commonalities in the beginning stages. During the scribbling stage, the "making of marks" on paper is seen as the children's attempts to communicate, to symbolize, and make meaning of their world.

Although researchers in the area of art may vary in the naming and time span of the stages of artistic development, there are similarities in the path of development. The scribbling stage is common to all.

Earlier research in the area of writing concentrated on the written product, but the work of Britton and Graves encouraged researchers and teachers to focus on the process of writing.

During the eighties researchers have studied drawing and writing of young children and have found interrelationships in the product and the process. Until recently most of the studies involved children of kindergarten or school age.

Further study of younger children will verify or compliment the existing research.

Chapter Three

Design and Procedure

Overview

This chapter deals with the design and procedures used for the study. The selection of the subjects for the study and the procedure are followed by a report on the pilot study.

Subjects of the Study

Six children, three boys and three girls, from a day care class of four year old children were the subjects of the study. An atmosphere of self-discovery and positive reinforcement permeated the day care classroom. Expression through drawing and writing was encouraged by the day care staff. Children from various ages were observed in six three hour sessions as they were involved in drawing, writing and painting activities. This observation as well as discussion with the director and day care worker led to the selection of six children who, during the normal course of activities in the day care, were seen to be eager to make marks on paper but not wholly involved in "drawing the alphabets". The observation also allowed the researcher to become familiar with the routines of the day care program, the staff and the children. By the end of the observation period the researcher was accepted by the children as another adult with whom they could interact. Approval was obtained from the parent/guardian for participation in the project.

The Procedure

The major purpose of the study was to examine the symbolizing of young children through the medium that adults indicate to be writing and drawing. The children met with the researcher an average of seven times (ranging from three to ten times) for an average of twelve minutes (ranging from six to eighteen minutes) producing an average of twenty samples (ranging from seven to thirty three samples).

During the initial session the six children gathered around a table in a small basement classroom of the day care center. Since this was not a room the children frequented, there were many questions and distractions. The procedure and use of the audio tape were explained. The children were informed that they would meet with the researcher individually and at that time they would be invited to make marks with a variety of markers on eight by eleven inch sheets of white paper. The samples would be collected in a folder for the researcher's use. The small audio tape would be placed on the table where it would run continually during the time the child was with the researcher.

Although the sessions began in the classroom, the eventual move to the director's office reduced the number of distractions. The children sat at the desk while the researcher sat at an angle beside them. This allowed for the most effective observation and communication.

Following the introductory session, the availability of the materials dictated what the children would do at the beginning of each session. Further instructions were not necessary as the child usually picked up a marker and began making marks with it. The researcher made a point of allowing the child to initiate the conversation. This usually happened after the first marks were made on the paper. In the first session Erin began with heavy lines and the beginning of an 'E'. Then came another vertical straight line with wavy extensions to the left. She made some scribbles and then 'colored' part of it. When making another wiggly line and extending it down the side of the page Erin asked,

E: What does that look like?

R: What do you think?

Sarah was more certain of her intentions.

R: O.K. Here's some markers and you can do anything you want on the paper.

S: I'll do my name.

Hague initially inquired about the tape recorder and when his curiousity was satisfied, said, "I'm gonna make a picture of my mom'.

As the researcher and the children became more familiar with each other, the researcher asked questions to focus on the child's understanding of writing and drawing. Laing (1969) (quoted in Hunsberger) states, "Genuine dialogue cannot occur without disclosing ourselves to each other, and without according the other, and finding from the other, recognition and acceptance of how we experience one another" (Hunsberger, 1982, p.3).

The researcher's role was that of observer and responsive audience to the work of the child. The ethnographic research attitude of "I can find out" is liberating, not only for teachers and researchers, but also for children. Harste et al. continue, "For this new attitude allows a change from testing our language hypothesis to giving the children the opportunity to test theirs. For children it allows a change from being language observers to language participants, from being tenants of our texts to owners of their own texts (Harste et al., 1984, p.223).

The audio tape recorded all conversation of the child during the session. Notes were constantly taken to record actions and communications not picked up by the audio tape. There were times, especially at the beginning of the study, when the children requested the researcher to play the audiotape. They were fascinated with hearing their own voice on tape.

The analysis procedure was inductive. It involved studying the one hundred and nineteen samples of the children's work in order to find similarities and differences in the products, the level or stage of development in drawing or writing, and ways of combining writing and drawing. Review of the transcripts and the observation notes taken at each session revealed similarities and differences in the way the children went about "doing" drawing and writing as well as their perception and understanding of the two ways of expressing themselves. "The meaning we make grows out of the transaction between what we observe and what else we have experienced and therefore know" (McCutcheon, 1981, p.8). Case studies were written about each child. Stake's understanding of a case study follows:

> descriptions that are complex, holistic, and involving a myriad of not highly isolated variables; data that are likely to be gathered at least partly by personalistic observation; and a writing style that is informal, perhaps narrative, possibly with verbatim quotations, illustration, and even allusion and metaphor. Comparisons are implicit rather than explicit. Themes and hypothesis may be important, but they remain subordinate to the understanding of the case (1978, p.7).

Themes common to all the studies emerged from the data. These findings are presented in chapter V.

The Pilot Study

A pilot study was conducted in an Early Childhood Services class. The purpose of the pilot study was (a) to determine the age of the child who would provide the required information, (b) to determine the feasibility of working with one child within the classroom setting, (c) to determine if an audiotape and research notes adequately recorded the communication, and (d) to become familiar with the procedure and make modifications to the design if necessary.

1. Procedure

Ten children in a self contained Early Childhood Services classroom met with the researcher for an average of eighteen minutes each, producing nineteen samples. Initially the reseacher and child worked at a table within the classroom setting. This setting was abandoned when we found this table became the focal point of the classroom. It was difficult to differentiate the voice of the child who was making the marks on the paper from the voices of the other children. The many distractions made it impossible to record the child's non-verbal communication. Moving into a storage room attached to the Early Childhood Services room allowed for completion of the pilot study. Although the teacher and researcher used the term 'making marks on paper' the students readily spoke of writing and drawing. The children were given two pencils and paper and told they could do anything they wanted on the paper. The audiotape placed on the table recorded their verbal communication and notes were taken by the researcher on their non-verbal communication and actions. The samples were retained by the researcher and a photocopy was given to the child if the child requested one. Transcriptions were made of the audiotapes.

2. Results

The following conclusions resulted from the pilot study.

a. Because of their school experience and age most of the children were beyond the transition stage between drawing and writing. The majority of the children were "alphabet" conscious and "alphabet" drawing was present in seventy per cent of the samples.

b. The researcher found it difficult to work with one child within the classroom setting. The popularity of the center resulted in a noise level which did not allow the researcher to differentiate the voice of the child under study from those involved or watching. The amount of distraction did not allow for adequate observational note-taking on the part of the reseacher.

c. The audio-taping, samples and observational notes adequately provided the needed information for the study. A mini hand held audiotape was found to be less intimidating that the cassette model.

d. The researcher decided to look for a younger group of children. The research would be conducted on a one-to-one basis to allow for adequate observation and field notes. The importance of avoiding the use of the terms "writing" and "drawing" were reinforced. The researcher found it was not necessary to give instructions after greeting the children. By having the materials available the children began on their own.

Summary

The study was designed to examine the interrelationship of drawing and writing of young children. Six four-year-old children selected from a day care program met with the researcher in order to "make marks on paper". The researcher, taking the role of participant observer, interacted with the children, audiotaped the conversation, wrote research notes, and collected the samples. Study of the transcripts, samples and notes taken while observing, led to the writing of the case studies. The studies appear in Chapter IV whereas the summary of the studies appears in

Chapter V. A report of the pilot study concluded Chapter III.

Chapter IV

Case Studies

Overview

This chapter contains the case studies of each of the six children involved in the study. Each of the three boys and three girls from the day care class of four year olds met with the researcher from three to ten times for an average of twelve minutes. During this time they produced a total of one hundred and nineteen samples on which they made "marks" with a colored marker.

The chapter is divided into seven sections. The overview is followed by a case study of each of the six children. The case studies of the three girls (Erin, Nicole, and Sarah) follow those of the boys (Tyler, Hague, Karl).

Tyler

Tyler spent time with the researcher on three occassions, but due to sickness was unable to continue in day care. During these sessions, which averaged just over six minutes in length, Tyler produced seven samples.

Tyler had been with the other five children when we met as a group in order to become acquainted with each other and the project. We had met in a very small classroom in the basement of the day care. During the second session it became evident that Tyler was apprehension about being in an unfamiliar room with someone he did not know very well.

Tyler sounded as though he knew what he was going to do when he came in for the first session. "I'm gonna make a playground - purple" and with that made two purple squares, one on top of the other. "Now I need black over it". With ease the black marker went round and round making a circular scribble on top of the purple. He started using the blue marker in a similar motion but soon switched to a back-and-forth motion leaving the area at the center concentrated in blue. That concluded his drawing. When asked to explain it, Tyler said the purple was a circle playgound, the black "goes ring-around-the-rosy" and the blue "goes flop, flap over on the birds". Apparently Tyler was relating his experience with the playground.

At the begining of the next session Tyler wanted to trace around the tape recorder with the marker. Like some of the other children Tyler was curious as to whether the markers had a scent. Just as before Tyler used the purple, blue, and black markers in primarily a circular motion to make a circle playground. This time he added," There's lots of people who live in the castle". The next picture, a balloon, was drawn by fiercely moving the markers around on the paper and over the edge of the paper. This time he did try a few straight lines which broke from the circular action.

When Tyler was told by the researcher that Erin and Karl had completed a number of drawings, Tyler decided to do a few more. The next one, unnamed, was a conglomeration of circles and strokes scribbled randomly on the page. At times he was not looking at the page as he appeared to enjoy the feel of the marker on the paper. While doing this he said, "I can color, right?" Although the last picture began with circular motions, more back-and-forth motions were evident. At the conclusion of the drawing he scribbled fiercely with the blue marker to make one area darker. That was "the blast station". In the hurried conversation prior to his leaving, Tyler was able to convey that he lived in "Tronto" and that "his house was on a little island on space land".

Tyler's drawing in the last session showed a change in formation. Prior to this he had used mainly free-flowing circular motions, but this time there was an attempt to incorporate more form. He began by making a purple rectangle, a black circle, and a purple circle. One was made after the other and placed in a triangular formation on the page. Each time he went over the circle with another color. Tyler did not call these circles. To him they were triangles. The last one he drew was the most complicated.

He made a purple circle and went over it with the black marker and again with the purple. With the black marker he made the lines thicker and then added a triangle to the bottom of the figure. He started with tight controlled motions coloring the area but eventually those motions expanded to the larger circular ones he had been using previously.

A purple triangular shape was drawn on the next page. He went over the purple with the black marker and made short heavy back-and-forth motions on the left side as he did so. He continued his "decoration" of the bottom and sides with controlled hand motions and began to scribble with larger strokes through the center. It was as though his ability to control his hand motions had come to an end, the spring had been released, and his strokes led to larger back-and-forth motions and eventually to larger circular motions through and around what he had been drawing. It appeared as if the process of making the scribbles was more important than what he produced on the paper.

To the right of his drawing Tyler decided he would make a "T for Tyler and my names". This was the first time Tyler had given any indication that he knew the sign for his name. He then made a black line down the left side of the page. Lines along the top and bottom joined it to the "T" on the right side. When Tyler was asked if he could write anything else; he responded that he could not. It was apparent Tyler knew the difference between writing and drawing and at this point the "T" he made was the extent of the writing he was willing to produce.

The majority of Tyler's work was created by random circular scribbling on the page. It was the mode with which he felt the most comfortable. Edwards (1979) concludes that the circular motion is a more natural movement than the movement required to draw a square (p.65). Gradually he began to incorporate the back-and-forth movements and the smaller controlled motions which required a greater degree of concentration. No longer could he be looking elsewhere as his marker roved around the page. During the last session Tyler was experimenting with the recurring and flexibility princip~~le~~ as the shapes took on different forms (Clay, 1975). Usually he was adding some feature to the shape or trying a different hand movement. The last sample was the only one in which straight strokes were used to any degree. Concentration and control of hand motion were necessary to complete these. Tyler did not talk a lot while he went about his work. When he did it was mainly to name what he had made but he did not reveal very much of his thinking through his talk. From some of his comments it was evident that there was much more going on in his imagination. The few words he said only revealed a glimpse at the multitude of thoughts which were probably tumbling through his mind.

Hague

Hague made sixteen samples in the seven sessions he met with the researcher. The average session length was twelve minutes. Hague began enthusiastically by saying, "I gonna make a picture of my mom". Taking the black marker he began a circle near the bottom of the page. The facial features included eyes, eye brows, nose, mouth and hair. A stick-type body was attached. It was interesting that Hague positioned the paper so that "his mom" was lying on her side. He did not explain his drawing or tell a story as he drew.

His second drawing was of a window. He began with intersecting horizontal and vertical lines. Lines drawn at right angles completed each of the quadrants separately. His next drawing was also of a window but he used a different approach to complete the frame. He drew the intersecting lines as before. Beginning at the center bottom of the page a line was drawn along the bottom, up the right side and across the top to the center of the page. The left side was completed in a similar manner. He did not speak while he was drawing and only repeated the names of his drawings when asked if he wanted to say anything about them.

Remembering that he had the opportunity to listen to himself at the conclusion of the previous session, Hague began the second session with a little ditty just to make sure that his voice would be recorded. At this sitting he again concentrated on drawing the human figure and a window. Then he said,"I want to make a picture of myself and my doll and my baby". As with the first paper, the figures were placed on the paper as if they were lying on their sides. He began with the eyes, drawing first the pupils and then the outside of the eye. After drawing the nose and mouth, a circle enclosed all the facial features. Again a stick-like body completed the figure. "That's my dad", commented Hague. A smaller circle was drawn above the head of the first figure. Remembering to include hair, Hague returned to the first figure and did so. At this point Hague turned his paper so that the figures would be upright in front of him. Indistinct facial features identified the second head. Following the drawing of the stick body, Hague added hair to the second figure. His only comment was, "I'm bigger!" The representation of himself was infact smaller than that of his daddy.

Prior to starting the second paper Hague said he was going to make a flag. Following the same procedure used to draw the first window, Hague drew his flag. This time the lines were connected smoothly. He had greater control over the marker as he worked more slowly.

As the researcher put Hague's name on the back of the page, Hague questioned what was being done. When Hague did not agree that the writing indicated his name, Hague was encouraged to show the researcher what his name looked like. Hague avoided the question. Instead he proceeded to make another window. This time a bit of a story accompanied what he was doing. "It's dark in there now. I think they went to bed. Everybody went to bed". Efforts to encourage him to talk more about his pictures or to produce more samples failed. He was more interested in rolling the markers or joining them end to end. When asked if he could make numbers or letters, he said he didn't know how to, but when asked to write his name, he replied,"I don't want to". He did identify correctly that the researcher was "writing" when she was taking notes.

During the third session Hague again directed his energy toward drawing windows. Exercising the flexibility principle he made gradual changes in the way he made the window (Clay, 1975). The first one was smaller than the previous ones but followed the same sequence of procedures used to draw the second window in the first session. The next began with the cross, but the outside frame was completed in three motions. Hague tried to draw the next window using two markers held closely together. He held the markers still and turned the paper. He was pleased with the result but still did not talk about what he had done; he was ready to go out to play.

The next session with Hague began with him playing with the markers. It seemed that he had exhausted his repertoire of represeintions. Prior to coming to the session he and the researcher had seen a butterfly in the playground. Drawing on that experience the researcher encouraged Hague to "make" a butterfly. Hague's "I don't know how to. You show me how" led to a verbal picturing of the butterfly. That not being sufficient, the researcher reluctantly drew the body and wings of a butterfly in the corner of the page. Hague observed and commented, " rectangle stuff, that rectangle stuff". He was beginning to relate this to past experience. When he did begin he did so very cautiously, still questioning, "How do you make one?" Carefully he followed the example. Having completed it he decided to make another one. Examining it he said, "But the body not big enough". Antennae completed the butterfly and upon the researcher's suggestion Hague eagerly made another butterfly, this one bigger than the second. Having gained confidence in his own ability, Hague proceeded to draw another butterfly adding his own stories as to where the butterflies were flying.

At the beginning of this session Hague had refused to do anything on the paper. Was it because he did not have an example to follow? Once more the researcher pursued the writing of his own name. He replied, "I don't know how to do it". Comparing the writing of his name to drawing of the butterfly, and also questioning him as to whether or not his parents had written his name for him, still did not bring Hague closer to an attempt to write his own name.

Having experienced a measure of success in the previous session, Hague was eager to show what he could do when he came to see the researcher for his next appointment. Without hesitation he made two butterflies commenting,

> I write on paper...I like to make a lot, alot, of butterfly on these paper and I want to make on these paper butterfly around it, make a lot of butterfly and off the paper...Now I'm gonna make a different kind after that one...I got them. Look at those butterflies.

Hague's enjoyment was evident by his happy disposition and eagerness to participate. As he made one butterfly after another, variations of his original appeared in both the formation of the body and wings. On one instance he made something he did not like therefore smudged through it with his finger. He later used this same technique in order to "color in" the body of the butterfly. Continued experimentation revealed that if he made dots with the markers and then smeared them, the desired effect came about. With greater concentration he squashed the markers down upon the paper so that there would be more ink for him to smudge.

Handing him a third piece of paper the researcher again asked Hague to write. His reply was, "I'm gonna make - No, you make a car". By following a similiar procedure to that used in making the butterfly, the researcher encouraged Hague to become more involved. The marker was exchanged between Hague and the researcher. Cooperatively, and with a great deal of verbal coaching, a car appeared on the paper. At one point he referred to a "circle rectangle thing". Hague made two more, each expressing variations of the original. His motions were cautious and slow, exhibiting some of the same lack of control apparent when he was making the butterflies. To the invitation to write Hague replied, "How about don't want to...I try-did to but now I can't...I don't know how to".

Four days later Hague came again and this time with an idea of what he was going to do. It was a variation of the window he had made at an earlier sitting. He proceeded with a greater degree of confidence than had been shown previously, creating a more complicated design which included diagonal lines. He exhibited great concentration and care so that the interior lines did not extend beyond the borders created by the rectangle. More control of the marker was evident now than in the previous sample. Hague then wanted the researcher to show him how to make a triangle. He tried on his own and rubbed with his finger when the sides would not come together exactly. Encouragement and direction from the researcher allowed him to finish the next one.

At the final session when different colored markers were introduced, Hague was interested not only in seeing what kind of marks they would make, but also in constructing a long marker by attaching the markers end to end. For his second sample he held two markers side by side and proceeded to make a face. Squiggles at the top of the head represented hair and Hague talked about "coloring them in". This was the first time he had used the markers in this manner. On the other occasions he had made smudges with his finger in order to "color in" the area. Hague's first samples had been a representation of a human. Even though the last one was done with two markers it displayed greater detail than did the first one.

Although Hague enthusiastically began the first session with the researcher, some of that enthusiasm seemed to wane when the variety of representations was exhausted or when he was asked to do something in which he did not have confidence. At these times Hague enjoyed playing with the markers by rolling them or attaching them end to end.

Hague's ability to control the marker increased with time. This was especially evident in the second last session when Hague again drew a rectangular shape. What began as awkward movements evolved into controlled movements which fairly accurately represented what he wanted depicted on the paper. Smoother lines, greater detail and a sense of balance were evident in the sample.

It became apparent to the researcher that unless Hague was given some direction and guidance the sessions would not yield meaningful samples nor would Hague be happy. He did not want to attempt something he was not sure of. He was not ready to take that risk. As Margaret Donaldson states

> Thus a very important part of the job.... is to guide the child towards tasks where he will be able objectively to do well, but not too easily, not without putting forth some effort, not without difficulties to be mastered, errors to be overcome, creative solutions to be found. This means assessing his skills with sensitivity and accuracy, understanding the levels of his confidence and energy, and responding to his errors in helpful ways (Donaldson, 1979, p.120).

Hague did what many children would do. He employed the only way of learning that he knew, which was to pick out special features of mature adult performance and seek to master the steps involved in achieving these effects (Gardner, 1980, p. 158). Given an example Hague chose first to copy it using the skills he possessed. Although his beginning movements were tentative, he gradually exercised the generating principle (Clay, 1975) experimenting with hand movements and with variations on the form of the object to be reproduced. "Through the process of looking at, manipulating, examining in detail, and seeing relationships of size and shape, an understanding of the object and space was formed" (Brittain, 1979, p.189). He was able to evaluate his own product and make the necessary changes in the case of both the butterfly and the car. His immediate method of compensating for something he considered incorrect was to smudge the ink. His original smudging led to a fascination with "coloring in" an area.

Hague had an awareness of geometric shapes as was evident by his comments,"rectangle stuff, rectangle - circle thing, I make a square, and I didn't make a triangle". Even though he was repeatedly encouraged to do so, at no time did Hague attempt to write or draw letters. At one point the researcher had asked him to have his parents show him how to write his name. During the next session he said, "I try-did to but now I can't". Earlier in the same session he had referred to his making butterflies as "writing on paper". Brittain maintains that there seems to be a parallel development between the achievement of forms in drawing and writing. "If a child makes closed forms in drawings, his writing also includes closed forms. If the child is still scribbling on the paper, the writing sample, although smaller, is also primarily a scribble" (1979, p.58). Hague did have difficulty making closed forms as was evident in his butterflies, cars, and attempt at the triangle. Could this be the reason or was it that he needed to be shown how before he would attempt the writing of his name?

As Hague become more familiar with the researcher he became more verbal as he made his marks on the page. He appeared to enjoy himself while he was at the task and also took time to "play" with the researcher. After having talked with Karl, he too decided to color the researcher's and his own finger nails with the marker. He also enjoyed listening to himself on the tape recorder.

Karl

Aside from the introductory session, Karl met with the researcher five times from May 29 to June 11, 1982. The sessions ranged from four minutes to sixteen minutes; the average being eleven minutes. During this time Karl produced nineteen sample drawings as well as a large amount of recorded speech. This gave insight into what he was thinking as he went about his producing.

Before Karl was ready to begin it was important to him to survey all the surroundings of the room. It was a room in the basement of the day care center; a room unfamiliar but most fascinating to Karl. The first marking on the paper was a scribble in the lower right hand corner which he named "an Easter egg and a bubble bath". His ideas came from the pictures on the wall. On the same paper he decided "to do a man that has a sword of Stone Crystal". With concentration and control of his hand movements he represented Stone Crystal. He pointed out the nose and eyes after he had drawn them. As if to release tension after concentrating so hard, Karl returned to the bubble bath and scribbled furiously over part of his original depiction. Saying the second sample was going to be different, he decided he would "make Stone Crystal's buddy". Again with concentration and control of movement he made Stone Crystal and his buddy. While in the process he commented that it was hard to do and made little noises to himself during his intense concentration. Prior to "making" the hair he said what he was going to do. The marker soon became the hair and was randomly circled on the page with such vigor that Karl said, "Calm down. Oh, oh, hair's gonna blow away". The last thing he did was make a heart in the sky and colored inside it. His lack of control did not allow him to color inside as he had wished.

The second session indicated that Karl had a very active imagination and could easily flip from one subject to another. To begin with Karl was again preoccupied with Stone Crystal. He represented him in the manner that many children his age would - a circle with two lines extending downward. It became apparent that the process and the feel of the marker on the paper was more important to Karl than the product. He drew a sword and in his attempt to color it, freely scribbled over both drawings. Although it was no longer distinguishable to the researcher, Karl pointed out "a sword, a face and his feet and his eyes. He's all purple". He placed a second paper over the first one in an attempt to copy and create a "buddy" for Stone Crystal. He held the marker awkwardly in his hand but was delighted both in the act of scribbling and in the creation of the "buddy" and as if by magic it appeared, "There it comes!...Aw, ready for Stone Crystal? A buddy". That same delight was evident as he made the third picture which began as Superman but later turned into a robot. Here again he began with control in his hand movements, making a circle with a pattern of lines within it. His scribbling to color it in was more controlled than in the previous drawings.

On the next paper Karl made a watch. This began in much the same manner as the previous drawing - a circular shape enclosing a pattern of scribbles. This time Karl did not color it in, but looking at the scribbles asked,"What is that number? R?" Looking more closely he became more excited when he found a "K" but immediately said, " But I don't know how to make a 'K'". Taking a blue marker he vigorously scribbled over the original marking. When asked why he did that, he replied, "So I can have a watch". Obviously his markings were taking on different meanings for him than those apparent to the researcher.

With some encouragement from the researcher, Karl attempted to put his name on the next paper. He made a black vertical line with a purple line extending at an upward angle from the top and a green line extending in a downward angle at the bottom. As he was doing so he said, "It's hard. Does that look better like that? It doesn't look like a 'K'. ...You put two marks on the things but it doesn't look like a 'K'." To make an "r" Karl turned the page and beginning at the bottom made a line that curved toward the right at the top. "Does that look like an 'r'?" asked Karl. Looking at it in combination with his previous markings, he decided the entire markings looked more like a bow and arrow. His story began to unfold as he drew a man beside it. Becoming more involved he drew big eyes to depict a "scarey man". He began to whisper and eventually let out a loud roar. At this point Karl was totally immersed in his hunting adventure and found part of a rabbit in the existing markings. "He's trying to always hop over. Looks like he's trying to roll himself over". Karl added a tail and "big, large feet" and became carried away as he made large extensions drawing beyond the edges of the paper. His story continued, "He's trying to shoot a rabbit, but- It caught! A rabbit and he's- The rabbit scratched him hard, the monster...Yes, the monster and he got dead". Karl continued to talk about the nice rabbit that saved people. The markings on the paper had become an object and this object was alive and real to him. The manner in which Karl told the story and the tone of voice conveyed feelings of affection toward the rabbit.

At the beginning of the next session Karl was asked to write. That didn't appear to be a problem as he immediately made a circle with a line extending upward from the top-center of the circle's circumference. He named it "p". "Now, a 'h'." Tentatively he drew a line starting near the center of the page and extending downward to the bottom of the page. A slight curve to the left completed that line. Going back to the original starting point he drew a curved line to the right and downward ending even with the bottom of the first line. Although Karl requested affirmation with, "That's an 'h'?", he did not receive it and did not continue to make any markings on the page until once again encouraged to do so. Taking a thin brown marker in his hand, and with the same degree of hesitance, he made a mark on the paper.

> Five. It's a five...
> Five, five, five,five.
> Oooh,
> Almost like a car thing, this thing,
> Oooh, Oooh,
> Oooh, Oooh,
> Cars, cars are gone.

Karl's hesitency indicated an uncertainty of how he should make the number five. The marking did show the curve that is found in the number "5". Karl then retreated to name it " a car", an object which was more familiar to him and which did not have a standard form as he probably felt the "5" must have. The object itself was not as important as the making of the mark on the paper.

For a while Karl talked but did not attempt anything on paper. Because he had already made a "P", the researcher encouraged him to do so again. His question, "What does a

'P' look like?" confirmed the experimental nature of the first attempt to make the "P". Although he looked back at it and traced over it with his finger, he did not want to put marker to paper. Instead he suggested, "What if we make a toilet?" and then proceeded to make a series of blue ovals or circular shapes attached to each other. Not all were closed shapes. The importance of his telling the story along with his drawing was emphasized by the fact that he wanted to listen to the tape recorder.

Karl wanted to see Erin's work, but allowing him a peek at it was a mistake, as it only confirmed Karl's notion that he didn't "know how". He resorted to coloring his finger nails with the blue marker. When it was suggested that Karl go out to play, he quickly took the blue marker and scribbled on another piece of paper. He pressed his finger on the resulting blue scribble hoping to have it function as a stamp pad. Very quickly two men carrying swords were drawn. One had a head, body and legs whereas the other had only a head and legs. Karl continued talking and singing about these characters which he had seen and heard on television. Two other markings, one closed and the other open were drawn near the heads of the men. He drew one continuous line to encircle most of the objects he had drawn and then announced he was going to stop.

Before beginning the next session Karl colored the tips of his fingers. Holding the black marker awkwardly in his hand, he started to scribble in a circular manner but later changed to a back-and-forth motion. This appeared to be a comfortable place to begin since he had lost some of his confidence during the previous session. Karl was asked to write on the next page. He made a marking similar to the letter "E", but his question, "What letter is that?" indicated the symbol had no meaning other than that it represented a letter. Just as before the symbol then became an object, this time a flag. Further encouragement to write led to the "making" of Peter Pan. Because there was no green or red markers, Karl used the thin brown one to make a small controlled circular scribble which was later covered by one continuous scribble using a back-and-forth motion.

Karl's scribbling with the thin brown marker on the next paper was an attempt to make a "smelly book". He then made a straight line which later served as a baseline for his rabbit. Hesitant to try on his own, Karl tried to persuade the researcher to draw a rabbit for him. Eventually Karl, on his own, drew a rabbit complete with body, head, feet and a protrusion just behind the head which could represent long ears. Having received praise Karl replied, "A rabbit! Yes, he's my rabbit. He's a nice rabbit that likes me and you". He then retrieved the previous piece of paper and decided he would make a butterfly. It was similar to the rabbit but contained greater detail. Two wing-like protrusions extended upward from the body. Because it was "flatter" Karl called it a butterfly. By adding legs he decided it should become a rabbit but it "does look like a butterfly". Further examination led him to remark, "But it look like a fly....That's the first one like that". Karl had an image in his mind and his drawings were in the process of becoming. He regained his enthusiasm and readily went on to the next paper to draw another "butterfly", one with extensions from both the head and the body. The legs were drawn in one continual motion rather than as four separate appendages as before. Quickly he moved on to the next paper. Having experienced such a degree of success he wasn't about to stop yet. Very quickly he produced another rabbit. The body appeared incomplete compared to the other drawings, but the face demanded greater concentration in order to complete the detail. The ears were placed beside each other near the top of the face. He scribbled extensively where the legs had been on the other drawings and then concluded, "The rabbit says,'Hey, I'm all finished'". When Karl was asked to write his name on the paper he said that he didn't know how to and made no attempt to do so.

Because markers of different colors were introduced at the next session, Karl was primarily concerned with experimentation with the different colors. The new green marker meant that Karl could now draw Peter Pan. He had suggested this earlier but had decided not to because he did not have the appropriate color. With the red marker he drew a rectangular shape with one pointed end. "There's Peter Pan's plane". Beside this he drew a green Peter Pan , a man with a head, body, and legs. The body was slightly colored in. The only comment he made about the depiction of the man on the next page was that he was long. It was similar to the previous one but only included the outline. On the next page he traced Peter Pan by placing the page on top of the previous drawing. His tracing did not produce a duplicate copy. Features, presumably eyes and nose, were included in the face. A hat, complete with a red feather, added the finishing touch. Excited with the prospect of drawing Wendy, he took the blue marker and drew another human figure. He named the parts as he included them: face, tummy, legs, forehead, and eyes. He tried the chalk on the white paper but found that it didn't produce the effect he wanted. Another green human was drawn and white chalk was used to cover it. His experimentation might have continued but his father came to pick him up. That was the last time Karl was able to work with the researcher.

As Karl made his markings on the paper it was important for him to receive feedback. Without this his confidence decreased and he went through periods where he felt he was unable to produce anything on paper. These interludes were filled with conversation, playfullness and jokes. What really inhibited him? Lowenfeld believes every child would naturally use his deeply rooted creative impulses without inhibition, confident of his own means of expression. When a child says,"I can't draw," we can be sure of some kind of interference. (Lowenfeld & Brittain, 1975, p.8). Problem solving was a stimulant to produce. His experimentation with the rabbit and the human figure showed that once he experienced sucess he wanted to change and refine the original so it would bring greater satisfaction. "Through the process of looking at, manipulating, examining in detail, and seeing relationships of size and shape, an understanding of objects and space is formed....it is only through the cognitive processes the ability to assimilate some of this information through a larger framework of memory and understanding, that we can say that any learning takes place". (Brittain, 1979, p,190). He also demonstrated Marie Clay's recurring principle where on several occasions he produced similiar drawings which suggested a schema (Clay, 1975 p. 20). Both the original rabbit and man lacked the refinement found in the later drawings. Karl's enthusiasm and excitement grew as he experienced success and saw his drawing becoming a representation he was pleased with. Although Karl was intrigued by the different colored markers, and for him certain colors initiated certain characters, the color did not carry the same importance as what he is able to do with the marker.

From Karl's hesitancy with letters and numbers, one would assume he has not worked with them to a great extent. He is able to bring to mind and paper some semblance of what they "should" look like but as yet the making of letters was not something he wished to pursue. The rabbit or man in his stories held far greater meaning for him. He became so absorbed in them that at times they became the object itself.

Karl's first attempt at letters was a "K" and then an "r". Because both of these letters were part of his name they held a certain amount of importance for him. He was confident that the representation for the "P" was truly a "P". His attempts at an "h" conformed to some of the hand movements necessary to complete a conventional "h". When he made the "E", he knew he had made a letter but was not certain of what he had made.

Karl knew the difference between writing and drawing. Each time he was asked to write he made an attempt to do so. The motions used were linear rather than circular. He did not necessarily continue in the mode he started. Depending on his level of interest and his power of concentration, his subjects very easily changed so that the subsequent markings could be an illustration for the story in which he became involved. At times there was also a change in the interpretation of the shape that he was making. Karl felt more comfortable drawing than he did writing.

Erin

Erin, an inquisitive four year old girl, met with the researcher ten times during which she produced twenty five samples. Approximately half of the sessions were conducted in a small class room in the basement of the day care center and the other half were conducted in the office of the administrator of the center. At all times Erin showed that she was very interested in her surroundings and her conversation often reflected her surroundings or other areas of interest while she was making marks on the page.

The first mark made on the paper, in the initial session was an "E". Soon large wavey scribbles extended across and to the left of the "E". The line was eventually carried down the side of the paper along the bottom, up toward the center making a large curve and then again up to the top. At this point the line was a road. A circle in the curve served as "an eye for that road". As she added eyelashes it became what Kellogg would call a radial (Kellogg,1969,p.75). The eye was "looking up in the sky" to see the clouds, so Erin made clouds (more scribbles near the top of the page). Suddenly what she had drawn became a little funny dog which was looking up at the sky. Just as one can find various shapes in the clouds, so it seemed she was finding that her drawing had taken on a new meaning. Later she commented on the long dog and decided she could call it a "tiger dog". She looked at the surroundings in the room and asked questions about the tape recorder. She came back to her paper and said it was a girl dog "looking back" rather than "in the sky". She pointed out "his long tail". At one point it seemed that the paper became a map upon which she drew an object but not necessarily its visual representation (Brittain, 1979, p. 12). Indicating that she wanted to do her "homeworks", she began by making another "E". She then made a representation of an "M" but was not certain as to the name of the letter.

The first markings on the second page represented Jamaica. As she added the leaves to the trees she again used the radial formation. The rectangular shape she drew next represented a door. Inside it she made an eye that gradually was enlarged as she continued going around it with the marker. She stopped to draw a horizontal line above it and toward the bottom of the shape a straight line for the mouth in order to make a face. Commenting that, "It isn't even," she colored in the left half of the shape so that the face was no longer discernible. Connecting one marker to the other she eventually tried to use the three markers while they were attached end to end. The resulting shape was "a whale eating all his food". It was a miniature reversal of the shape she had made on the previous page. Erin's narration indicated that the marks on the page were an unrelated collection of what she was able to produce in the drawing mode.

After being distracted by a purse on the shelf, Erin returned to the third paper. She began with two lines similiar to the makings of an "E", used a back and forth motion to go over it and then decided it was time to leave.

During the second session Erin made a mark which resembled an "H" and above it an "i". When asked what she was doing she replied, "I don't know". As she made the next mark, a backwards 3, above it she said, "What's that?...A three". She named the next mark a "5". This was the only time she made numbers. She continued with a representation of her name and named the letters. When she saw the researcher putting her name on the back of the page Erin commented,"I spell it with E R I N". Taking the paper she said,"I'll write my name," and starting in the upper left hand corner of the page proceeded to do so. It more accurately represented her name in that it contained a marking which to a greater or lesser degree stood for each letter of her name. Her attempt to write another letter did not materialize beyond a line. She told of closing the curtains and windows because of an oncoming storm as she moved her marker back and forth solidly coloring over the initial line.

In three of the ten sessions, Erin choose to trace around her hand. She did so in the second session and this did not prove challenging until she decided a ring was necessary on her finger. This was also one of the occasions in which she asked the researcher for help as she was trying to make something. This time she wanted to "draw" a ring and the second time she wanted to draw a heart. When she did not receive help she eventually drew a band across one of the fingers she had traced on the page. The heart proved more difficult and caused her to give up.

On the third paper she traced her hand again and extended the drawing to make her arm. She began to color between the fingers saying, "I think I'll make a gun in my hand". Her story changed from "shooting somebody" to "shooting a rooster" while she drew a circle and made an outline around it. Again Erin got up to explore the objects on the shelf of the classroom. She returned momentarily to feverishly color with a back and forth motion over the tracing of the hand saying," I'm pretending this is all the blood when I fell down". She again returned to the objects on the shelf and said," I'm just thinking. I really came down here to play with the things".

The third session again saw a presentation of her "homeworks". In the center of the page she made what was the largest shape on the page. It resembled the letter "D", but Erin did not name it as such. She then began in the middle of the page working from the left to right making "E i r M" for her name. When the next letter did not work out to her satisfaction she scribbled through it and then continued to make two more" E's" and an "i". She had come to the edge of the page. Indicating she had "to go behind it" Erin turned the paper around and continued with an "m" and two "o's" to the edge of the page. The one row of letters stretched across the page with one half being upside down in relation to the other half. On the next page she started with a line that looked like an "n", but when she was asked what it was, said,"I don't know". She drew a picture of a girl inside it and later transformed it into a T.V. by adding buttons on one side. Having decided the T.V. had broken, she scribbled through the buttons. She decided the girl needed more hair and a crown. Picking up a blue marker she "made a line better" and drew extensions on the top of each side of the figure and said, "the teddy bear has ears". After adding blue ears to the girl, she took the marker and starting with the legs completely colored over the figure thereby obliterating it.

Erin's next session began with an inquiry about listening to the tape recorder. She was concerned whether Karl and Hague had the opportunity to listen to the audiotape. While talking about this she made a "P" on the center upper half of the paper and began coloring in the upper part of the "P". Her conversation indicated her intentions:

> Now see how I did another homework today.
> More different.
> Now that's upside down.
> That's E.
> See all my homeworks!

During this conversation she made a representation of a "b", a circle with a vertical line extending downward from the bottom of the circle, two variations of the previous two representations and then an inventory of the letters she could make. She made five letters in a row proceeding from left to right and then placed two letters at the head of these in a line, the first closest to the line of letters. In front of that she made a small figure of a human (head, body and legs).

After a diversion to the "play things" in the room, Erin returned to the table. The second paper found her tracing over the first, but her circle and line was transformed into a dog. She made "E R I W" near the top of the page and said, "I spell E R I M", and then looking at it again added, "What's that? ERIN". Near the end of the session she indicated that she had to make "D's", but these shapes then became sunglasses with "the sun burning on them". She had produced a radial effect.

It appeared that Erin's "alphabet" making took more concentration than did her drawing. She delighted in and focused her energy as she went about her work. In most instances she began with writing and later resorted to drawing. The fourth session found her making one page of letters, a second page which was a combination of writing and drawing and then a page of scribbling in a circular motion. She said," These are bananas but now they won't be bananas". This circular motion gained in momentem and size.

Erin began the next drawing without a preconceived idea of what she was going to do. It was exciting to watch her as pictures and stories were created from the markings on the page.

> I might make a caterpillar castle.
> See her hair. Because it's a hand.
> The hair. The hand!

> Look it!
>
> There's a hand, there's the other hand, there's the other hand and there's the - no, and there's a little hand and there's a thumb.

Soon after that the same excitement was evident when a "tie" suddenly appeared in her drawing. She concluded that session by drawing a picture of a girl complete with "a jacket". As she drew she gave a commentary of what she was doing. When asked to tell more about it she replied, "It's sort of drawing". In five of the ten sessions she portrayed a human figure. The elaboration of the figures do not increase with time; for that matter this depiction of the human was the most detailed.

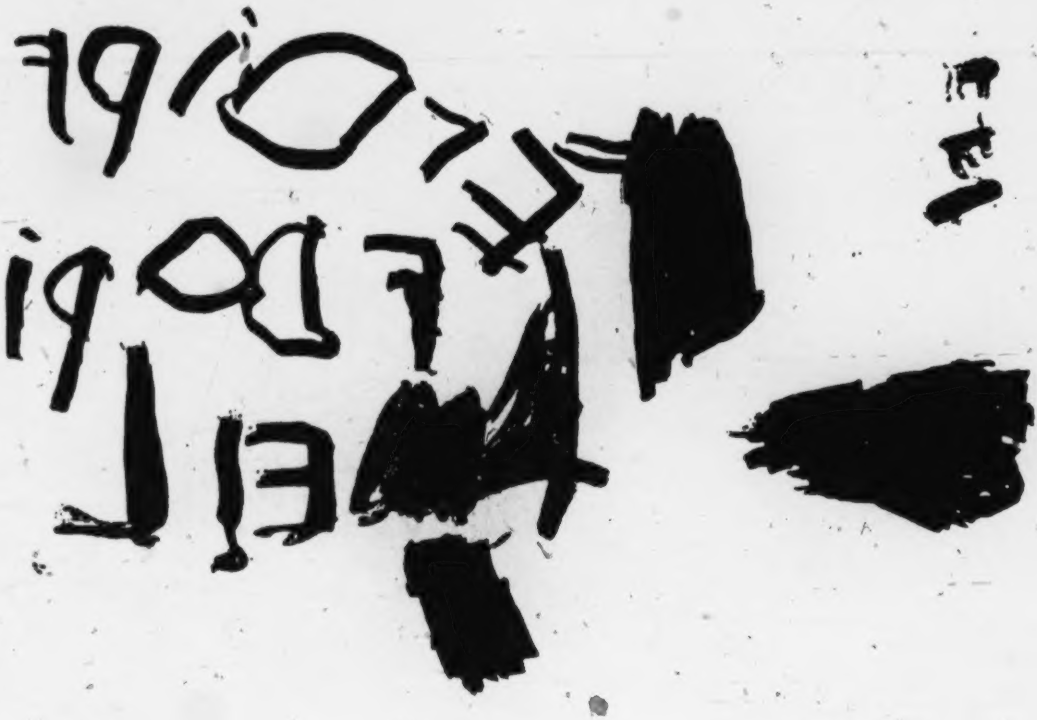
The final result of the first sample of the fifth session stands out as being different from any other Erin produced. It was the only time everything was colored in solidly. She did not talk about what she was doing as she started coloring in an area with the purple marker. Only after she had included dots for the eyes and nose, and a line for the mouth did she indicate that it was a girl ghost. She then decided she was going to make a chair, but having attempted it, she colored over the scribbles solidly to make a cirle of black. This was the beginning of a starfish which was made by extending lines outward from the center of the representation. As she was telling the story about a ghost being caught by the starfish, the lines grew longer and extended around the bottom of the ghost. She colored solidly between all the extentions of the starfish as she talked about something unrelated to what she was doing. Upon telling the story's conclusion (the ghost was shot, went to jail, and died), she picked up a blue marker. The solid blue vertical coloring below the starfish was the jail and a small area of black was "the mile of fence" which was necessary because the ghost was "real bad".

While Erin was working on the previous page she had quickly made an oblique and a horizontal line on the second page and then returned to the one she was working on. A little while later she returned to the second page again to add an oblique line going in the opposite direction so as to complete an "A". She did not say anything as she did so. Later when she was working on the second page and had made an"H","E","i","r", and "M", (referring to the marking of the "A") she said, "That's a different one," and then went on to name the other letters. Again she said, "N" instead of "M". Repeating the letters she was not sure of the "H" and also hesitated on the "N". Then infront of the letters she drew a rainbow consisting of two purple arches. She made larger black arches over them, calling them "the mommy" and then completed an outer circle to enclose the rainbows. Erin indicated she knew what writing was because when she saw the researcher writing she asked, "What are you writing?"

The first sample in the next session again was a display of the letters Erin could produce. She began in the center of the page and went from left to right with her most familiar letters "E","i" and "r". She then turned the paper side ways and beginning from left to right made two "E's" and a straight line. Her comment was, "I can much do most little words". This was the first time Erin had referred to her markings as "words". She made another mark that looked like an "n", but then scribbled over it with the black marker. Two lines were extended from the bottom of the black mark. After deciding that it should have a name, she decided to involve the researcher in her game.

> Come on. You have to guess!
>
> You have to think about it and then you have to say it.
>
> Don't look like a table?

Erin wanted to "write more homeworks" so with the paper upside down she made an"E" but started from the bottom of the "E". At this point she was going from the center to the left edge of the page. She made a backwards "r"and "D", an"i","q" and backwards "F". Under this she made another backwards "F" and again was going from right to left. She then made a half circle and a line, followed by a half circle in the opposite direction and another line. A "q" and "i" followed. Indicating the last line she said,"This was different homework". Having made a reversal in directionality, she also made a reversal in the formation of her letters. She tried an "o" but it did not seem to work. After asking how to make a "y", she tried but scribbled over it with the black marker when she did not achieve the desired effect. (Illustration below.)



It seemed that she had expended her energy on her "homeworks" and was now ready to trace around her hand. Only a head was drawn on the next page and she seemed to be in too much of a hurry to even complete it.

Erin had an idea what she was going to do before she started the seventh session. One vertical line was made down the page and then some horizontal lines were made in the upper half of the page. A blue marker concluded a similar lattice effect on the bottom of the page. To the left she made a line design which upon conclusion was named a road.

The next sample began with Erin tracing her hand and arm. Upon receiving a marker with a thinner writing surface, Erin began to make letters on the page. She began by making an "R" and a "P" with the brown marker and then switching to the black marker made "P", "R", and a figure that partially represented a backwards "P". She made two smaller "P's" in front of the previous ones. When asked what they were she referred to them as "the alphabet" but was not able to name the particular letter. With confidence she decided to do more "alphabets". Using the larger tipped marker she made two larger "R's" and a "P". She traced over these with the blue marker. She finished by making an "E" that resembled the backward 3 she had made earlier. This one had four extensions rather than the three. In all cases but the one Erin started at the left and proceeded to the right. She also worked from the top to the bottom as she arranged her letters on the paper. She completed the work by enclosing the "alphabets" in a circle which eventually became the outline of the head of a human figure. Legs, feet and hair were added as were the facial features which were placed over the alphabets as if the alphabets did not exist. In the remaining space another smaller human figure was drawn. This one also was a head with legs extending from the bottom. This one did include arm extensions from the side of the head. Again the top outline of the head was colored to indicate hair. After hastely making a curved line for a mountain on the next page, Erin said, "I don't want to make anymore pictures".

The next session began with Erin saying,"I know how to make different things". She began by making a rainbow but eventually decorated the outside of the rainbow with slashes of purple. The decoration below the rainbow was a "D", "P", "R" and a circular representation. These were her most recent acquisitions in her repertoire of letters. Turning the paper around she decided to "write" her name with the blue marker. At the conclusion she said, "That's an 'm'". With the black marker she made an "r" and two "m's". As she was reading the letters she had to repeat them in order to figure out that the last letter should have been an "n" rather then an "m" if she wanted it to represent her name. In all her previous occasions where she made a letter which looked like an "M", she usually read "N". It appeared she understood there was an incongruity. Following that she decided she was "not gonna do another one".

The next session began with her making a large circle with a flattened side. This was the head to which she added a "stomach, legs, and feet. Facial features plus a bit of make-up completed the head. A smaller human figure was drawn to the left and it too included a head, stomach and legs. The remaining three marks on the page were a result of experimenting with the markers of different colors. Taking the red marker she made a border all around the outside of the next page. A large black circle with a few small designs inside it concluded her work for that day. She did not talk about or explain what the markings represented. She had been busy telling about her excursions of the day.

At the beginning of the final session Erin was asked to write. She said, "First I have to make an 'O' ...because I'm doing homeworks". In the upper left hand corner she made a "D". Moving to the right side of the page she made a complete circle. To the left of it she made a backwards "r" and "P" followed by an "i". She could not remember the name for the "P".

The conversation that followed gave some insight into her understanding of letters.

E: Sometimes I do different homeworks, like I do my name homework. I do different homework like"E" and

> "O" and "N". I don't do it at school. Sometimes I do it at school. Sometimes I don't.
>
> R: Does anyone tell you you should do it?
>
> E: Yeah, myself does.
>
> R: Yourself does! Does your mommy tell you to do it?
>
> E: But - not especially, but I try and do it and I just think about it.
>
> R: Does Linda [the day care worker] ever tell you to do it?
>
> E: No, but not, not especially, but I just do it.

It appeared that the desire and initiative for writing her letters came from within Erin herself. The nearest she could come to explaining it was that she thought about it and just tried. Her experimentation and increase in the amount of "homeworks" was evident from one session to the next.

After Erin made her "alphabets" on the last sample it was difficult to tell if she was writing or drawing. She began with:

> I have to make a line across here and another line across here and one more line across there and then I write up here like that's a bird. I could write bird. You want to see what I could do? ... Look, I made a window.

She had made a cross to represent a bird and a rectangular shape to represent the window. Although she did not say so, the lines drawn could have represented lines for writing. When she was asked to draw she indicated it would make her so tired that she would fall asleep. No more marks resulted on the page.

The primary focus of Erin's marks on the paper was the making of "alphabets". In doing so many of the principles which Marie Clay writes about in What Did I Write? (1975) were present. Her name was her personal sign. As Clay states, "it is only a rare child that learns any other words before attempting to write some of his own name" (p.44). This became the base (recurring principle) for most of the letter making that occurred in the subsequent sessions. The strongest example of her inventiveness and use of the generating principle (p.27) was made in the fifth session. She began with a "p", turned it upside down to become a "b", made a circle with a line extending downward from it, and then made two marks which were variations of the former ones. There was a flexibility in her directionality of her work. According to Clay it could be a failure to produce a correct pattern already known or a deliberate variation of known or observed patterns (p. 26). Because Erin was concentrating to such a degree on making new and unfamiliar letters, the directionality was not the first priority.

Erin's letters were usually written in a horizontal fashion. Sometimes this created a problem when she came to the edge of the page. Most often she would adopt an easy solution and fill any left-over spaces with left-over letters, ignoring at the moment any constraints of the directional principle (p.39). At regular intervals Erin would display an inventory of the "alphabets" she felt confident in producing (p.31). She usually started with the most familiar (her name) and gradually added on the "different homeworks" which were more difficult to bring into her mind or more difficult to make. Already in the third session she began to scribble through her tentative representation of letter if they did not turn out as she anticipated. This occurred several times during the third and the sixth session. This seemed to be her way of eliminating something that did not meet up to her standards or the preconceived standards someone else may have set.

At times her original markings took on new meanings as she continued working with them. As indicated earlier, one was transformed into a table. In another instance what began as an "E" eventally became a "tiger-dog, and at another time it became a window which was colored over completely with black.

The representation most common in her drawing was that of a human figure. Her first attempt was in the third session.

She eventually colored over the whole representation with the black marker. The first one drawn in the fourth session was part of her "inventory". It was small in size and composed of a head, body, and legs. The next one drawn in the same session was the most detailed including, feet, arms, hair and a "jacket". In the sixth session a head including the basic facial features was quickly drawn. The two figures in the seventh session included a head, legs, and feet. The detail in the face was expressive of the facial make-up with which she had been playing. This was again referred to in the ninth session when the figures represented Erin and the researcher. This time bodies were drawn between the head and legs.

During the first four sessions Erin's desire to "play with the things" allowed her to concentrate on making marks on paper for short periods of time. Upon moving to the administrator's office, there were fewer distractions and Erin's concentration on making homeworks and other representations increased.

The amount of talking she did gave indication of a sociable little girl. She apparently discussed what she did with the other children because she knew that both Karl and Hague had had opportunity to listen to their recorded voices on the audiotape.

Nicole

Nicole meet with the researcher ten times during which she produced thirty three samples by "putting the marker to paper". For the first three sessions we met in a small classroom in the basement of the day care center, for one session in the day care classroom and for six sessions in the office of the director of the day care center.

On twenty of the samples she depicted a human. Most of them were made in a similar manner although variations which occurred bore resemblance to the first ones she made. The outline was made by starting at the bottom and making a sweeping motion in a clockwise direction. Two circles were made near the top for eyes, one near the center for the nose and two or three horizontal lines extending across the bottom of the circle for the mouth. Legs usually extended downward from the bottom. During the first session a purple circle between the nose and the mouth (the belly button) completed the Mommy standing to the right of Nicole on the first sample. A grandfather with a big eye was featured on the next page. It too was made very quickly and had extentions not only from the bottom, but also from the top. One line went from the head to the left corner, one to the center of the top of the page and one to the right corner. She repeated this procedure in a later session. She talked about family members as she started on the third sample. Having made two humans she decided to draw a pig. She drew a circle but did not know how to proceed. When help from the researcher was not forthcoming she decided to try a rabbit instead. The semi-circle with a small curved line for the ear represented the bunny. To represent arms she then added black lines extending upward from the head on the second person she had made . A few black dots to the right of her drawings concluded the session.

To begin the next session Nicole decided to make a circle to represent each one of the family members (mommy, daddy, Nicole, brother and sister). The mommy, in the center of the page, was the largest and most complete. The other circles were spaced evenly around the central figure. Nicole colored in the eyes of the circle to the left indicating that she was sleeping. She delighted in going off the edge of the paper as she made the legs. She continued on to the circle in the upper left making eyes and a drooping mouth to show this person was sad. The circle in the upper right corner was small, therefore she had difficulty including anything more than the eyes. Nicole indicated it was going to take a long time to draw the daddy but as she became involved in telling her personal story, the drawing was forgotten and only a circle was made inside the original circle.

She wanted to draw "big" on the second page so she prepared herself for this. She tensed up just as though she were going to start a race and then drew a "big mommy" on the page. Arms extended outward from the sides of the head. While she made a sister in the bottom right corner, she made interesting little noises which appeared to show that she was enjoying what she was doing. This figure did not include arms and because it was so near the bottom of the page there was only a suggestion of legs.

The next sample was the most completely filled page she did. A "huge daddy" filled the center of the page. When she had finished she said to the researcher, "I want you to spell my name just a minute". This was Nicole's first attempt to sign her name. Without a demonstation, but with encouragement from the researcher, Nicole started. She turned the page so that she would have room to write. Tentatively, slowly and with a degree of awkwardness, she made three marks which resembled an "n", "j" and "x". With satisfaction she said, "That's all my name is". Taking the purple and black marker she made dots all over the page. She colored over the bottom part of the head and part of the legs. It then became a game as to how many markers she could join together and still be able to make marks on the page. Black marks on the head were a result of this. More dots appeared on the page as she held the two markers together in her hand. The next sample resulted as she was investigating how much pressure she could put on the markers. At first she said it was a window but later said she was just playing with the markers.

Although Nicole used a greater variety of colors to make the first human in the next session, she basically followed the same format. One eye was larger than the other and a circle was situated on the top of the head. Beside this human figure she made another circle saying it was going to be a huge gorilla. The circle was the same size. With its completion she said they were fighting, but she did not indicate this in any way in her picture. She made the features on the two simultaneously. As she included legs on the second one she also did on the first one. A black mark under the mouth of the second one was the chin whereas a horizontal line between the nose and the eyes was another mouth on the first one. When Nicole was asked to write on the second page she again very quickly made another human figure indicating that it was the researcher. Again she went over the edge as she made the legs at the bottom of the paper.

Nicole did "her writing" on the next page. Beginning in the center of the page she made a series of vertical lines and circles moving toward the right edge of the page. She then moved back to the center and working toward the left again made circles and vertical lines toward the left edge of the page. The spacing between them became smaller as she neared the edge of the page. The final mark on the page was a horizontal line with a circle below it in the center bottom of the page. As she was making these marks she repeatedly asked the researcher, "What is it?"

Her comment appeared to indicate that she knew she was writing but she did not know what she was writing. Prior to making the next sample she indicated it was going to be a "huge mommy with a baby in her tummy". Having made a large circle including large eyes, two lines for a mouth and legs she said it was a "pretend one" and made an oval shape with eyes, nose and mouth to the left of the mommy figure for the baby. Her talk concentrated on the difference between huge and small. A small daddy, "whose gonna be crying", was made in the upper right hand corner. She indicated by the shape of the eyes that he was sad. Also included were the mouth and legs.

The next session again found Nicole making human figures but this time with exaggerated features. She made what she referred to as a "forehead" and above that made a circle saying, "that his little boy on his head standing". Beside the "laughing" dad was a "big sister who was mad at herself". The enlarged eyes which extended beyond the outline of the head, the large nose and the lines for the mouth which also extended well beyond the outline of the head may all have been an attempt to indicate the anger. The legs were minimal and again went off the edge of the paper. Although the researcher asked Nicole to write for her she again made the human figures and this time made use of variations. A big father had an enlarged head, eyes and mouth, but the legs were very small. Beside this she made what looked like a backward "D". The head was made above this while the legs stretched around the sides of it. When questioned she named the backward "D" a "bum-bum".

She was prepared to write on the next page but insisted that she do so in blue marker. She began with the same clockwise circular motion that usually began her human figure. To the left she made a tall vertical line and a smaller circle between the line and the original circle. To the right of the original circle she made two more vertical lines. Again she knew it was writing but didn't know what it said.

R: What does it say?

N: l,o,o,l,l, ... Is that your name?

R: No, that is not my name. My name looks different than that. Is that your name?

N: No.

R: How does your name look?

N: There's an "N".

On the next page she made a line and a large circle and indicated it was "a ten". She then wanted to know whose name she had made. Realizing it was not her own, she decided it must be Judy's. She made two lines below the ten and then made a curved line to join the bottom line and the original vertical line. "That makes Linda", she said. She then made another smaller vertical line and a circle at the left of the page. Indicating that she had to make "more pictures", she colored solidly with the purple marker between the line and the large circle.

She had been asked to write on the next page. She again made the beginning of the human figure including one open and one closed eye. When asked what else she could do, she said that she just making circles even though she was doing so with the same degree of caution exhibited when she was "writing". She then made a horizontal line below the three cirles she had colored in. She wanted one more paper and this was "gonna be all my pictures". This was again a human figure drawn a little more calmly and more along the vein of her earlier ones.

Nicole produced variations on the human figure in four of the next five samples. She also framed the first three . Following the making of the eyes, nose and mouth, she made a double horizontal line across the top of the head and then made two circles between it and the top outline of the head.

For her that represented "his kid". A blue rectangular outline framed the figure. A purple frame was squeezed between the blue one and the figure. As she made the next head she changed her idea of what it was going to be from a "mom" to a "daddy". Very quickly this elongated head was completed and framed with a single line of purple.

When the researcher asked Nicole to write for her, Nicole replied, "I'm finished". When the request was repeated, Nicole sighed and made a circle using the same motion she had used previously. This time she included two circles for eyes, one for the nose, and two for the mouth. Two more lines, made at a similar angle to the mouth and also extending out to the right of the head completed the figure. A purple circular line frames the figure.

Following this the researcher asked:

R: Is that writing?

N: No.

R: No. Can you show me what is?

N: Look it! That's a window. I'm all finished.

With that Nicole had made intersecting vertical and horizontal lines across the page forming a rectangle just off center. The total effect was well balanced. She asked if she could hear the tape recording and while doing so continued to experiment in the linear mode.

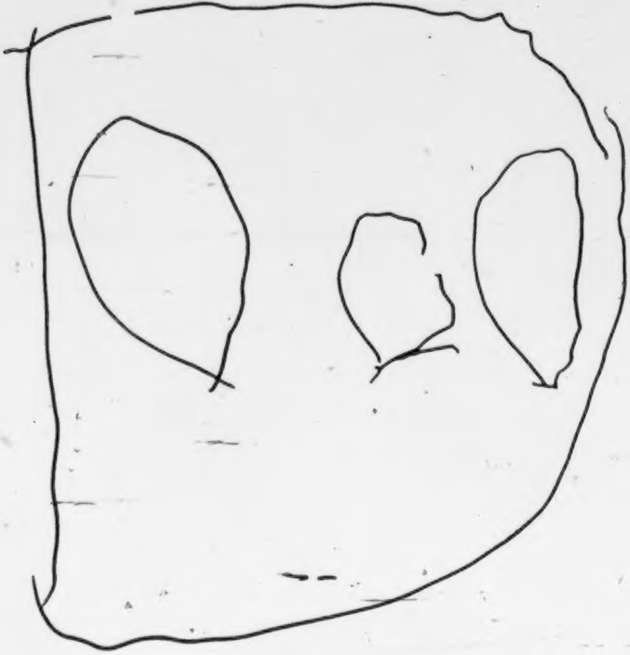
The final sample of the session was made with the fine tipped black marker. The circle for the head was smaller and the nose was excluded. Four horizontal lines signified the mouth and two wavy lines extending downward were the legs. An interesting feature of this one was the two lines extending from the head to the upper corners. She had also used this in her first sample when she depicted a grandfather. Nicole was then asked to write her name but refused, saying, "I don't know how to".

In the following session the head Nicole made was much wider than any she had made before, consequently the features took on different proportions. The legs had feet added to them. As before extentions were made from the head to the upper corners and to the top center of the page.

Nicole said the next figure was a boy and although the circular motion began in the same way, the end result was totally different from anything she had made before. The outline of the head was flattened on one side by a vertical line. Inside she made another larger circular motion and a smaller oblong shape below that. If she were following the same pattern as usual the two lines extending across the figure indicated the mouth. A elliptical shape to the right was solidly colored in. Carefully she put dots over the surface of the figure and then moved beyond the confines of the outline. When she did so she pressed down harder on the marker in order to squeeze ink out of it. She named the dots "hands", "bum-bum" and "eye".

Given the thin markers, Nicole responded, "Are these for me? To draw with? I'll write some too". At the same time she was making a figure very similiar to the first one she had made in this session. The only difference was that she made various size circles in each corner of the page.

Nicole was specifically asked to write on the next page. With great concentration she made a clockwise circular motion with the thin black marker. Although it was smaller, this was the same motion she usually used to begin the head of her human figure; beginning at the top right she made a curved mark with a downward extention and paused. The next was a curved line going left and below that a slightly curved horizontal line. Another shape similar to the first was made at the right side of the page. The progression had been from left to right. To enclose the marks a vertical line was made on the left, and then beginning at the bottom of that line, a line was extended across the bottom and upward toward the middle of the page. A line made from the top of the first vertical line proceeding right joined the one coming from the bottom (Illustration to follow). Nicole very convincingly said, "That says Ni-cole, but it says Nicole Morris".



With the introduction of some markers of different colors, some of Nicole's work at this session demonstrated an experimental nature. Using the black marker and using the usual clockwise rotation she made the shape of the head including large eyes and a circular scribble for the nose. This was the first time she made more than a circle for the nose. Again two horizontal lines extending across the bottom of the head. Taking the purple marker she began to color an area in the top right hand corner of the paper with a back and forth motion. Using this motion she made an ear on the upper left side of the head and then on the right side. "This is a rabbit," she said. She made a line down the left side of the page and then using larger back and forth motions scribbled vigorously around the bottom of the head. She then decided,"This is the mom now". On the next two pages Nicole scribbled in a back and forth motion to determine both the color and the smell of each of the new markers. Sometimes she scribbled very fast just to show how fast she "could draw".

Nicole began the next session by again experimenting with the different colors. This time she seemed more interested in the bright colors than in the smell of the markers. In the upper right hand corner she made a circle and then made the outline thicker by scribbling along it with a back and forth motion. As she made some marks on the page she indicated that they were various family members sitting on the beach. She changed their identity to suit the size of the dots or marks which she was making. The small dots represented the baby and the two markings of greater length represented the little sister and the big sister. These marks bore no identifying features as had the human figures she had been making in the past. The last mark on the first page was a vertical line intersected by a horizontal line. Both lines extended right to the edge of the page and were made on top of everything she had previously drawn.

Giving her a new paper the researcher asked Nicole to write. She made what looked like the representation of an "E" by making the top horizontal line, the vertical line, the middle horizontal line, the bottom horizontal line and then added another horizontal line between the bottom and the middle one. Very quickly she made a circular motion and a curved line that bore resemblance to a "C". In both cases she asked what it looked like. She made one more small vertical line to the right of the "E" representation and then said, "That's my name, Nicole Clark".

The human figure she made on the next page was made slowly. The head was about the same size as the legs. The facial features were proportionate to the size of the head and the lines for the mouth extended beyond the outline of the head. Ears were situated in the middle on each side of the head. She indicated she had made herself.

When questioned about the difference between writing and drawing, she knew there was a difference but could not explain it. "That's my name of it and that's um, that all um, that's a um that, that's me an it's-- it's, it's the same one". The puzzled look indicated her difficulting in putting it into words. She then wrote her name at the top of the page going from left to right "E 1 C O O" between the top of the page and the head of the figure that represented herself.

On the last page she made a large "E", a vertical line, a circular figure, another vertical line and a smaller circular figure near the right edge of the page. When finished she said, "That says Nicole Clark. They're a different name". She then made dashes around the "E" and first vertical line starting at the top and proceeding in a counter clockwise direction around them. Finally, using the black marker, she added another shorter horizontal line between the top and middle horizontal lines of the "E", and an oval shape between the middle and the bottom horizontal line. It was evident by the number of letters Nicole was willing to try to make that she was becoming more confident doing what she called "writing".

When Nicole came for the last session she announced she was only going to make two pictures. On both papers she made evenly spaced horizontal curved lines proceeding from the top of the page toward the bottom. When she was asked to write she said she did not want to because she wanted to go out to play.

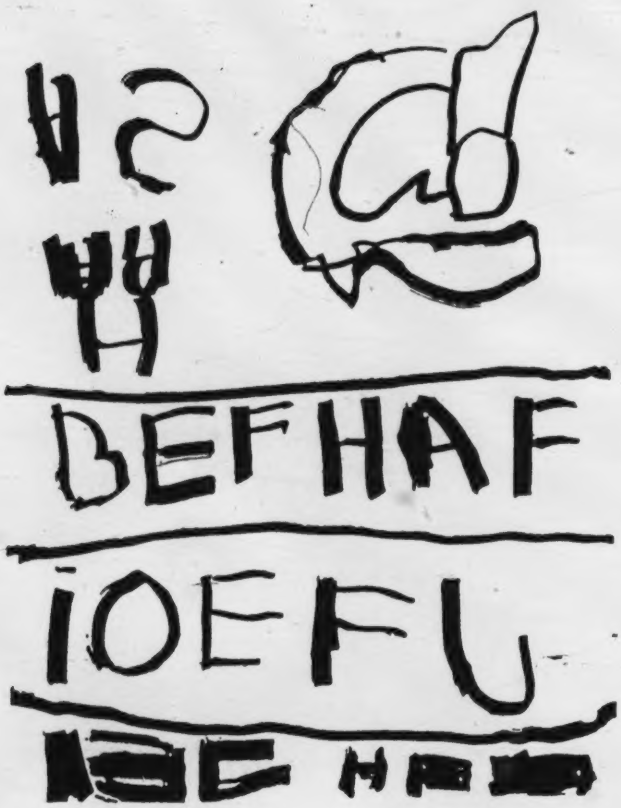
That which Nicole represented most often in her samples was the human figure. It was apparent from the first session that she felt comfortable making the representation consisting of a head and legs. Lowenfeld indicates this as typical of the five year old (Lowenfeld and Brittain, 1975, pg.155). Variations and elaborations of the figure occurred throughout her samples and in all but one of her samples it appeared that she ~~was~~ establishing her schema for the human. At times she chose to frame the human while at others she made lines connecting the figure to the outside edge of the page. The picture usually had a balanced effect. The figure took central position on the paper, two of approximately equal size were placed beside each other, or a very large one was placed beside a smaller one. The same sense of balance and use of space was evident in the first sample of her family. One large human was placed in the center and four smaller ones were placed equa-distant around the central figure.

Nicole knew the difference between "writing" and "drawing". It appeared that she usually had to prepare herself mentally for the writing task. On several occasions she made one more "drawing" between the time she was asked to write and the time when she actually went about the activity of writing. She always honored the request, but on several occasions she needed this lapse of time. The tentativeness of the first attempts at "spelling her name" indicated she knew she had embarked on a new and unfamiliar activity and that there is a correct way to spell. She immediately engaged in a linear mode, moving across the page from left to right and spaced the markings appropriately. On the occasions when she made more than one line of marks she moved from the top of the page toward the bottom.

Sarah

Sarah, an enjoyable four year old child, was eager to participate in the project. She worked with the researcher on seven different occasions from May 16 to June 16, 1983; the average sitting being eighteen minutes long. During that time she produced nineteen samples. All the sessions, with the exception of the initial introductory one, took place in the office of the administrator of the day care center.

It was not apparent from the first meeting that Sarah could differentiate between writing and drawing. Her first words were, "I'll do my name"., and as illustrated below started in the lower right hand corner of the paper with a backwards "S" and an"A". Above that she wrote "RA" and above that an "H". When finished she informed the researcher it was "a picture of letters". Below what appeared to be her inventory of letters she drew, "a picture down here, a really picture". She proceeded from left to right and at the far right made a black rectangle which she colored in. When asked what it was, she indicated,"I made it a bed". (Illustration to follow).



[redacted]

Her second paper was an "X and O game", the third "a tall skinny triangle" and the fourth was the only depiction of a human figure that she made in all the samples. With the exception of one, Sarah carried through on a pattern of both writing and drawing at each sitting. The recognized labels of "writing" and "drawing" did not appear to be firmly established in Sarah's mind. During the second session she watched as the researcher took field notes and questioned, "Why do you need to write?" The question reoccurred during the third and fifth session.

During the second session, when asked to tell about what she had done, Sarah used the word "write".

> R: O.K., Can you tell me a little about it?"
>
> S: (As she points to the E) E. People write it like a 3.

Was she referring to cursive writing or was she seeing the 3 as a reversal of the printed E, with the reversal playing no significant part?

Although Sarah referred to the same writing activity of the researcher as she had questioned earlier, she used the word "drawing" to label it during the last session.

> S: Hey, why are you drawing every time?

As Sarah struggled to convey her understanding of a postcard, she revealed that writing not only conveys a message, but that it must be spelled correctly in order to do so.

> S: How do you spell it?
>
> R: How do you think it might be?
>
> S: No, No! How do you do it really?

Sarah proceeded to write the letters "F,A,P," under her drawing. While Sarah added another letter she hesitantly explained, "I do an E, but it's too hard". She made a mistake so she colored over it. She then concluded that what she had written down said, "Giant".

During the next session Sarah referred to "making my name", "making letters" and "making a different color house". When the researcher tried to pursue Sarah's knowledge of the difference between writing and drawing by saying, "This one, you told me was writing. What's this?", Sarah named the object she had drawn rather than indicating whether it was writing or drawing. In each of the previous sessions Sarah had observed her name being written on the back of the samples. On the fourth paper Sarah decided, "I'm gonna write my name on myself". She placed the paper in front of her and wrote her name in upper case letters, starting at the lower right hand side and proceeding along the right side of the paper. In this and the following session Sarah noted that the researcher's name was written on some of the markers and not on others. Not only her name but also the researcher's had taken on symbolic value.

The fifth session found Sarah spending time intensely concentrating on one piece of work. When nearly finished she remarked, "You know what? This was hard to draw". When asked why, she replied, "Cause it takes twenty minutes".

When Sarah had finished the sample she said it was "The story of the woman in the shoe. She had so many children she didn't know what to do".

Having completed her first sample in the next session Sarah again decided to "put" her name on the back. When asked whether she was going to write or draw, Sarah said , "I think I'm going to write letters". She said the names of the letters as she wrote them. She hesitated a bit before going on, not exactly sure of what to do. "I think I'm gonna draw this one, O.K.?" She then "drew" the letters "A","B","E", and "I".

In each session Sarah produced an assortment of drawing and writing. They do not necessarily progress from simple to more complex. In her first sample Sarah not only wrote her name, but also produced her repertoire of letter shapes. The "E" and "F" were repeated several times; sometimes forwards and sometimes backwards. The last letter on the second line started as a vertical line, but upon examination Sarah decided to add a curved line. Prior to making her letters Sarah drew lines across the page. She started at the left side of the page and worked across to the right, evidently familiar with the left to right progression. Although she did not use this left-right progression the first time she wrote her name, she did on every other occasion in which she wrote her name.

With the completion of her picture all the available space was utilized. The second sample, though more basic in content, gave evidence of the same concept of use of space. Sarah not only made use of the space on the page but also produced a balanced composition in every instance but one. The representations were centrally located or placed so that an almost equal number were on each side of the page. Sometimes she would use wavy lines to give this sense of balance and on others she would frame her writing or drawing.

Sarah began the second session saying she was "gonna make words". She then clarified herself. "These are not gonna be words but the alphabets". While she completed the first half of the page she talked very little and if she did, it did not relate to what she is doing. Between the first two horizontal lines she made a circle followed by the beginning of a second one. She then went back to the first one to solidly color the outline in blue, the inside in purple and the central core in black. Returning to the blue mark made previously, she made several black circular lines and then colored in the center in black. A purple shape was joined to the previous one and it too was solidly colored in; this time in purple. Beginning at the bottom of the shape Sarah drew a circular line extending half way up. A line from the top came to join it. Inside the space created, she drew an

"H", paused, and later filled in more horizontal and vertical lines. Leaving a space she made a small blue rectangle. After looking at it she elongated it and colored the left half in solidly. This first part took Sarah a long time to complete. Her intense concentration indicated planning, comparison, and revision as she moved across the space she had allotted herself. As Brittain indicated the activity is a serious matter for children.

> There seems to be a challenge, not so much in mastering the materials, as in the mastering the concepts that a child is trying to portray. This is hard work. It is interesting to note that children enjoy the art activities in spite of the effort involved (Brittain, 1979, p. 196).

In the space confined by the lines drawn, she quickly wrote "E F O A". A space was left between the "A" and the "O" so she inserted a "B". An "i", "L" and "P" completed the line. All the letters with the exception of "P" had been written in the first session. The next line began with a solid blue dot which Sarah said indicated "the start of the line". She was distracted for a bit and eventually wrote an "E" and "P". When she wrote the "D" next to it she said, "That's what my dad starts with, D". Just as her name had taken on symbolic meaning so had the "D" for her dad. She completed the line with two solidly colored rectangles separated by the letter "E". She began filling the next space with a precisely drawn curly line, but upon reflection moved into a more free-flowing wavy line. Examining the page she drew another wavy line at the bottom and at the top giving the page a sense of balance. With satisfaction she said, "That's one!" She explained that the designs so carefully drawn "were the pictures I saw in Hawaii".

Hawaii was also the theme for the next sample. This time background knowledge was integrated with what she was doing. She began by outlining a large shape which resembled a triangle and then proceeded methodically sectioning off a portion and solidly coloring it. Maybe in some way she was trying to duplicate a postcard she had seen since her talk centered around receiving and sending postcards. While playfully entering into a dialogue with the researcher about sending the postcard to a giant who lived in Hawaii, she wrote her representation of the word "Giant". She knew that the word "Giant" had to have a certain length because after looking at what she had written, she said,"I need another one....another letter". She was not satisfied with the first attempt, so she darkened it in and while writing an "E" beside it commented, "I do it better. There!" Although the letters did not resemble the standard representation of "giant", Sarah was making a connection between the object and the symbolization of that object.

A number of days lapsed before Sarah did her next sample. She began by drawing horizontal lines across the page. The lines did not extend across the entire width of the page. Two vertical lines, one on the left and one on the right, gave the sense of a lined piece of paper - one you could write letters or words on. That's what Sarah did. Not completly satisfactied with the state of the marker's tip and holding the marker between her thumb and first finger, Sarah made a backwards "S" and then quickly completed the rest of her name. The second line of "E P F R" required greater thought. She began making a final letter for that line but scribbled over it until a solid blue circle was in its place. Adjusting her grip on the marker, she made the letters "R P R" followed by a solid blue circle. This time it did not cover up a previous attempt, but rather indicated either the conclusion of the line or a desire to create some similarity to the line above.

Sarah invited the researcher to guess what she was going to do on the next paper. This time she had an idea of what she was going to do before she started. She was fascinated with the quality of line produced by the thin marker, so she used both the thick and thin black markers as she drew a house. She drew a rectangle (which later became the door), a roof centrally located on top of it, another larger rectangle for the bottom of the house and windows situated on either side of the door. The roof was colored in with the thick black marker whereas the thin one was used to color around the edges of the door. "All finished!", she declared. Looking at her "finished" product, she decided it wasn't finished after all. "Maybe some grass? Blue grass! Nice tall grass". She made a row of tall pointed "grass" across the page. Reexamining what she had done, she saw there was space near the house that needed to be filled in, so using the thin black marker and beginning at the center of the page, she made a wavy line flowing to the right. Again beginning at the center, a wavy line flowed to the left edge of the page. Horizontal blue scribbles across the top of the page indicated "more grass way out in the field". Then Sarah very carefully colored in three of the four windows. The final touch was the blue sky, a line along the left side, across the top and down the right side.

Although Sarah started out with one idea, she continually developed that idea until she presented a product she was pleased with. As Brittain states,

> The process of drawing requires a set of continual interactions. Once a line is drawn on a blank piece of paper the child reacts to it. His next line therefore is influenced by what is already done, and the process of putting the third, fourth, and further lines are all

dependent upon what is already on the paper (Brittain, 1979, p.193).

A study, cited by Brittain, conducted at Yale University indicated maximum gratification was derived from solving challenging problems (p. 198). Was that happening to Sarah as she evaluated what had to be done to fill in the space on the page? Her completed picture actually gives a sense of perspective although she may not yet be aware of that concept. This is partially achieved by large objects situated in the foreground and smaller ones in the background.

Although Sarah told the researcher she would have to guess what would be on the next paper, she gave a running commentary of what she was doing as she made a picture similar to the previous one. She again began with a rectangle, but the order of additions to make the house complete, and the extent of the detail of decorations were different from the first one. One of these decorations was a chimney with smoke. This prompted her to go back to the previous drawing to make the same addition. Returning to the current drawing she added more detail to the roof, made a couple of wavy lines near the bottom of the page for grass and with the blue marker went along the sides and top for her represention of the sky. This sample was completed much more quickly than the previous one. The "recurring" and "flexibility" principles which Marie Clay (1975) wrote about were evident here. Similar drawings suggest a schema or programme of movements as well as allowing for variations in that schema. Sarah made another drawing of a house thirteen days later. It was one in a series of objects on the page and did not display the same amount of detail or the elaborate background evident in the two drawings of this session. When one compares, Sarah drew the house in the last session with a greater degree of ease. When the windows did not turn out the way she intended they were blackened in. The second house was drawn in the same style, but was eventually colored over with green; again an attempt to erase something she was not pleased with. This happened as she said, "because I'm tired of drawing".

Just having come in from playing on the playground, Sarah was hot and sweaty and certainly not prepared to exhibit the level of concentration she had in the preceding session. This time she was more inclined to experiment with the markers, enjoy her interaction with the researcher and scribble "just for fun". Sarah was given thin markers along with the thick ones she had before. The first sample began with wiggly lines as she tried to come to grips with what each marker was able to do. These lines were towards the center-left of the page. Having turned the paper on its side she wrote "M O H" and then began to decorate each letter. Although Sarah may have written an "M" at home or elsewhere, this was the first time she did so for the researcher. The "M" did not remain an "M" for long. The "O" was given a latticed design so that it looked more like a football and the "H", after being enclosed on the top and bottom, was colored in solidly with the thick blue marker. Remembering that the purple marker didn't work very well, Sarah decided she didn't want to use it. Before beginning on the second sample Sarah took care to assemble all the available markers. A vertical line was drawn on the paper with the thin black marker. With greater control and concentration Sarah drew a jagged line in a back-and-forth motion beside it. A half circle attached to the upper part of the line made what appeared to the researcher to be a "P". Again decorating came into play. Sarah filled in the space between the two vertical lines, while black, blue and brown circles filled the half circle. Then the guessing game began and Sarah thoroughly enjoyed the researcher's misunderstanding of what she had done.

To create the markings on a clean sheet of paper Sarah clutched the marker between her thumb and all of her fingers. She drew a horizontal line half way across the page and in a continuous motion curved the line below in order to decorate it. Lifting the pen she made a similar movement on the right hand side of the page. The next line began as a restricted, controlled motion but gradually flowed in a playful circular motion. Sarah commented that it was "just for fun" and "a surprise". This could very well have been Sarah's way of saying she had not planned anything, but she was enjoying the feeling made with these motions, the sensation of the marker grasped in an unusual way, and the pleasure of having individual attention. The last sample appeared to be done for the same reasons. This time she began with a line that concluded with a continuous circular motion. With ease she randomly scribbled in this same circular motion, but confined the scribbles so that space was left between the drawing and the edge of the page. From the beginning of this sample her intent was not focused on what would fill the page, but rather on writing her name on the back to declare that this was her work in the same manner she had seen the researcher do on other occasions. She was asked to put her name on the front but Sarah was determined to put it on the back. She did so in very quick motions probably, once again trying to immitate the researcher's movements.

Sarah's class was going to go on a field trip on the morning she did the next sample but she wanted to work with the researcher until it was time to go. Toward the end of the session she became a little anxious that the class might leave without her. Choosing a red marker Sarah began by making a curved line connected to a straight line but indicated she didn't know what she was going to do. Her conversation did not relate to what she was doing but occupied the time as she carefully filled in the area between the lines drawn. A square, connected to the bottom, was sectioned by means of horizontal lines and one vertical line down the center. Systematically and carefully using the various colours available, she decorated each section. Her talk centered on her immediate environment, the markers she was using and her summer plans to be with her daddy. Her concentration was very intense and when she wasn't talking she made little noises. With the black marker she carefully outlined the red and at this point commented that it was hard to draw. Even though she had been very careful, white spaces remained between the red and the black. This space was filled in with blue marker. She was ready to quit but changed her mind and said, "Ah, no, I think I'll finish". Slowly she began putting red dashes around the outside and the pace increased as she became more confident. Impressed with the beauty, the combination of color, and the concentration that went into this work, the researcher was curious as to what it represented for Sarah. "The story of the old woman in the shoe," replied Sarah. The colored decorations represented the children and the one larger black design was the father. In this instance again Sarah said she did not know what she was going to do. She began earnestly creating and adding on, all the while not talking about what she was doing. Only upon completion was she able to tell her "story".

During the first sample of the next session Sarah carried on in a similar manner as she had done in the previous session. Although Sarah chatted constantly while she was working, little of the chatter related to what she was doing. She did not name what she was going to do before she started, nor did she name it when it was completed. As before she appeared to compose as she went along. Entire spaces were filled in and some were outlined. Again she made some kind of a decorated border around what she created. Her level of concentration was very high. Her face was about three inches above the paper and again she commented, "Do you know this is hard work?" Some of her movements started out slowly and increased in speed as she gained confidence. Upon completion she wrote her name on the back and hurried on to the next piece of paper.

A black rectangular shape on the right hand side of the page was the beginning of this sample. In the upper left hand corner of the shape she drew three rectangles, one enclosed within the other, and each decreasing in size. The remainder of the space within the larger rectangle included dashes of black made with quick repeated motions of the marker. A border not only framed what she had completed, but also extended all the way around the edge of the paper to the left side of the paper. A blue squiggle filled in the space between the rectangle and the border, whereas blue dashes fullfilled the same purpose on the left and lower portion of the page. This was the only incidence in all of Sarah's samples that one movement or color overlapped that which had been completed earlier. Sarah began with green dashes in the space to the left of the rectangle, but having made a few scribbled over them in much the same way she had in earlier samples to indicate she wished to erase a mistake. In purple she wrote her name on the front of the page. Up until this time she had always put her signature on the back of the page.

Before starting the last paper the researcher asked Sarah whether she would draw or write. This broke Sarah's pattern of drawing and she expressed obvious pleasure in writing letters. On the left side of the page she made a large "E" and two connecting lines for a "Y". It became immediately obvious that she didn't feel certain of how to make a "Y" and asked, "Hey, how do you do this?" Not having received help she turned the paper upside down and saying, "I think I'm gonna draw this one," made lines to complete and enclose the shape. Near the top she wrote "E" and her version of "Y". It looked more like the conventional "Y" although it had four lines joining the lower stem. This was the first time Sarah had ever made a "Y" while she was with the researcher. As in previous sessions she drew lines above and below the letters giving the sense of writing on lined paper. Another set of lines horizontally enclosed "A B E" and "I". With the blue marker she drew a vertical line closing in the open side of the "E". Beginning in the top section she evenly distributed large blue dots in six rows, each row containing three dots evenly spaced. Here again she demonstrated a sense of balance in her composition. Sarah didn't want to talk about her work even when questioned about it.

Sarah began the last session drawing a large U-shape on the right side of the page and questioning, "Doesn't this look like a skinny U, a skinny U?" As soon as she had confirmation she changed its intent by saying, "But it's not quite. It's gonna be a skinny boat". Maybe a boat fit in better with her total plan of what she was going to do with the paper. It could also have been because she had the idea that she had to tell the researcher what she was doing as was indicated by the question, "Why do you always tell me to tell you what this is?" Although the question had not been asked this time it could have been a carry-over from the previous session. Sarah was very pleased with the boat as indicated by her expressions, "Funny boat", "It's gonna be the color of the rainbows", and "It's a giant!" A green wiggly line directly underneath of the boat and a blue wavy line along the bottom of the page indicated water. Sarah involved the researcher in her drawing by asking whether she would like a green sky or a blue sky. Sarah eventually chose blue because blue was the color of the summer sky.

Even though Sarah was tired her final work was completed with a great sense of purpose. Inside a rectangular box she was going to write her name, but having attempted the "S" she realized it was not made correctly. This time just talking about the "mistake" relieved her and she did not scribble through it as she did at other times. She then made another "S", the first time in all the sessions that she made a conventional "S". After writing the rest of her name she wrote "X O X O" saying at the same time, "I'm doing 'X' and 'O's' because I love you". Apparently she understood from her own background experiences that these letters also had symbolic meaning. A bond of friendship had grown between Sarah and the researcher and this was her way of expressing it in a visual way. She later added a "t" and a dot and though she did not so indicate, she may have meant the "t" to take the place of the researcher's name.

Chapter Five

Findings

Overview

Examination of the transcripts, field notes, samples and case studies has led to the presentation of the following summary of the findings in answer to the original research questions.

Research question #1. What is the nature of the similarities and differences in the way children go about "doing" writing and drawing?

Research question #2. What knowledge does the young child have about the nature of drawing and writing?

Research question 3. At what point and in what manner do children differentiate between drawing and writing?

Summary of Findings

Research question #1. What is the nature of the similarities and differences in the way children go about "doing" writing and drawing?

Although all children knew how to use the marker and stay within the confines of the paper, there were other similarities in the way they went about "doing" their writing and drawing. Examples of these follow.

1. Children explored the possibilities of the drawing/writing instrument.

Every child at one time or another played with the markers. At times they connected one marker to another in order to see how many they could attach together and yet make marks on the page. Some of the children tried making marks when two markers were held side by side in their hand at the same time. Every child had to find out whether or not the markers were "smelly" markers. When markers of a different color were introduced the children were eager to try them out. The availability of the fine point markers allowed for drawing and/or writing. Some of the children used the fine tipped writing instrument only on one occasion and then returned to the markers they had been using previously.

Sarah saw the fine point markers as another tool by which to enhance her detailed drawing. She also scribbled with them "just for fun". Karl initially scribbled with them to see what they could do but later used them to produce some of his most detailed drawings. When Hague used the thin brown marker he also made his most detailed design. Prior to this incident he had been making "windows" but not with the amount of diagonal and intersecting lines which appeared in this sample. Evenly spaced arches of solid bright color resulted from Nicole's fascination with the additional thick markers. When given the fine point markers she responded with, "Are these for me? To draw with? I'll write some too". Erin used the thin markers twice and in both instances drew something totally different from what she had done before. Both Nicole and Hague made dots with the thick markers and pressed the markers down on the paper in order to release extra ink.

There were times when the children were intrigued with the markers but there were other times when playing with the markers served to buy "thinking" time. There was a sense of relaxation after hard work. After playing with the markers for a little while they were ready to go back to their writing or drawing. In one of the sessions Karl became so intensely involved that the marker actually became the object for him. He had made a rabbit and the rabbit was trying to hop over and then roll over. When Tyler made his "circle playground" his marker also acted as the object as he furiously made the circular scribbles.

2. Children varied in the way they determined what was to be drawn or written.

Some children planned the process before beginning the activity. For others the process evolved while being involved in the activity. The ideas for what the children did with the markers and paper came from within themselves. On the first occasion the surroundings in the room (a picture of a rubber duck and a baby in a bathtub) served as a motivation for Karl. Very often the children expressed their intentions and said, "This is what I'm going to do". Karl was intrigued with the theme of the Stone Crystal in a number of his samples. In the first session Tyler knew that he wanted to make a "circle playground - purple" and immediately proceeded to do so. Hague initially worked on the theme of people and windows but once we had sparked an interest in butterflies, this became his theme. Drawing herself or another family member was dominant in Nicole's intentions but she also made it known that she wanted "to spell her name". Erin indicated her intentions whether she was drawing (the window or "I'm gonna make lipstick on that girl") or making her "homeworks".

Sometimes the children would begin their markings and later tell what markings they represented. Very often their intentions changed as they started to write or draw. They would begin with one thing and dependent on the degree of difficulty or on new ~~ideas~~ idea that came to them, the writing or drawing would change. Often the children would change the interpretation of the shape as they added to the markings. During the last session Sarah had drawn and colored in a large U shaped design. "Doesn't this look like a skinny U, a skinny U?" she questioned. When I nodded in agreement she decided, "But it's not quite. It's gonna be a skinny boat".

At one point Karl was trying to make letters. He had tried a "K" and an "r". "Does that look like an 'R'?" asked Karl. Examining it in combination with the other markings on the page he decided it looked more like a bow and arrow and went off on a tangent where he became very involved with a hunter and his expedition. The symbol and that which was symbolized had a fluid relationship.

At times the children's intentions changed from drawing to writing. On one paper Erin began by making "D's" but later transformed them into sunglasses. Nicole wanted to draw a pig. Upon making a circle she did not know what to do next. She asked for help but when encouraged to try it on her own, decided to make a rabbit instead of a pig. Erin's intentions on one sample changed more than those of any of the other children. She began with making an "E" on the page. Extentions from this crept down the right side of the page, gradually up the other side and to the middle of the page. The shape changed from a road, to a road with animate characteristics, a dog, a funny dog looking at the clouds, a tiger-dog and finally to a girl dog that was looking back.

Children may also have had intentions which were not stated. Tyler and Hague (in the beginning) did not readily talk about what they were doing. When Sarah drew "the story of the old women in the shoe" she purposely did not talk about it. As she began she said, "I'm not telling you".

3. Some of the children's thinking was conveyed through the talk which accompanied their activity.

All the children at one time or another gave a commentary of what they were doing. For some, periods of silence were necessary for their composing. Sometimes their commentary told about their drawings or writing but at other times it was about subjects totally unrelated to what they were doing. There were a number of instances when both Karl and Nicole did not talk but made little noises indicating their apparent contentment with what they were doing.

Sarah spoke very little while she was "making words" but was willing to talk about it afterwards. There were also times when she was concentrating so hard on the details of her drawing (eg. the old woman in the shoe) that she said very little. At one point she was asked, "Can you tell me about that?" Her reply was, "I'm not finished yet".

During the first few sessions Hague was very quiet as he went about his work. As he became more familiar with the researcher and as he experienced approval and success in what he was doing he became more vocal. In one of the last sessions he talked about the various features of the body as he made a picture of himself.

Often the children gave a running commentary of what they were doing as they went about their drawing. Erin did so frequently.

> That's a storm inside the outside. See the storm picking?
>
> Inside the window. I'm closing the curtains. Then I'm closing the window first. (She colored the whole area with black marker.)
>
> It's a little bit of a storm you see. I'm closing a lot of the windows, all the windows. Now I'm closing the curtains, there! (She made a blue scribble.) I'm gonna do my hand now.

This illustrates how some children allow two symbol systems to function in a parallel manner. If only the finished product had been seen there would not have been any idea of what went into the making of this solidly colored rectangular shape. Erin often talked about her "homeworks" after she had completed them, but rarely talked about what she was actually doing in the making of them. She did on one occasion because she did not know how to make a letter and wanted some help.

Although Nicole talked about what she did after she completed making letters, she did not give commentary on it as she was making the letters. In the seventh session she was asked to write. Concentrating very hard she made several marks on the paper which resembled the forms of letters.

> N: What does that look like?
>
> R: Hmm, I'm not sure.
>
> N: That's writing.
>
> R: Yeah, sure. Do you think it should say something?
>
> N: That says Ni - cole, but it says Nicole Morris.

It appeared much easier for the children to weave their stories as they were drawing than as they were making letters. For some it could have been because they were not as familiar with this mode of expressing themselves, therefore had to concentrate on making the letters correctly. Some of the stories the children told related to what they were doing, to what was going on in the day care or to their enjoyment acquired through playing with the markers. Hague was feeling good about the butterflies he had made.

> Now another one. It's going to a tree....That one is going to a mountain and that one is going to a bad thing....I'm going to make another one and this one is going to go to camp....cause we have a camper truck. This is going to camp now.

Nicole also very easily gave life to her drawing through her storytelling.

> Now I'm gonna make a daddy. This one is gonna be all purple. Here comes the daddy. This is gonna be the daddy. He's gonna, who's gonna be crying. The daddy's gonna be crying.

Karl was probably the most expressive when he became involved in his hunting expedition.

> K: That's the part.
>
> R: A part of what?
>
> K: Of the rabbit. That the rabbit - up there. He's trying to always hop over. Looks like he's trying to roll himself over. There's his tail. Gots big large feet. Cause he's big, big, cause he's a giant one...
> A rabbit. He's trying to shoot a rabbit but -oop. It caught! A rabbit and he's, the rabbit scratched him hard - the monster.
>
> R: Really?
>
> K: Yes the monster and he got dead. That was a nice rabbit.

4. The children went about their "hard work" with a high level of concentration.

Intense concentration was observed by the researcher as individuals went about their activity whether they were drawing or writing. They were serious about their task and sometimes considered it "hard work". Karl and Sarah admitted it was "hard" to draw but they were also the children who said it was hard to write. Sarah had been working on a single colorful and detailed piece for quite some time. She chatted about her family and other things which did not relate to what she was doing. At times she made little noises to herself as she concentrated very hard on the detail of her work. When she was nearing completion she indicated it was hard work but was determined to finish it.

S: You know what? This was hard to draw.

R: Was it? Why is it hard to draw?

S: Cause it takes twenty minutes....I'll finish it tommorrow.

R: Would you like to stop and go with the other children?

S: No, I think I'll finish.

Karl had already made one representation of the Stone Crystal and had decided he would make Stone Crystal's buddy. As he was doing so he commented, "hard to". Later he was given a new piece of paper and asked to put his name on it. Slowly and carefully he made a black vertical line, a purple line at an angle at the top and a green one at an opposite angle at the bottom. Upon completion he examined it.

> K: It's hard. Does that look better like that? It doesn't look like a "K". It doesn't look like a "K"?
>
> R: No? How is it supposed to look?
>
> K: You put two marks on things but it doesn't look like a "K".

Both Sarah and Erin appeared to concentrate for a long period of time and then come to a point where they had no energy left to put into their writing or drawing.

On one page Sarah had made a boat, a house and was making a second house. She had outlined and colored each one in solidly. She happily sang as she started the second house. Having completed the outline she began coloring the inside but was not doing so with as much care as before.

> This is going to be a green house all over. I'm going green windows, green doors, green roof, green

everything cause I'm tired of drawing. This grass. Here you go!

With that she handed me the paper. She did ask for another paper but made letters rather than pictures on that one . In one of the sessions Erin had put a great amount of concentration and time into making the letters she knew and experimenting in order to discover how to make others. Having finished that paper she decided to trace her hand on one paper and draw a very simple face on the next one. She had put most of her energy into producing the first paper.

5. The process in which the children were involved was often more important to them than the final product.

It was apparent from watching the children that for most of them the process they went through in order to make something on the paper was more important than the final product. There were times when intervention by the researcher was necessary in order to save a piece of work. Had this not occurred the original piece of work would have been colored over. This did happen a few times in the beginnning sessions. In the first session Karl made one scribble on top of another and because the latter scribble was so dark it was difficult to discern what was underneath. In the next session he again made one scribble on top of another but because the markings were outlines rather than solidly colored areas, the objects could be distinguished. The intensity of concentration that went into the making of Hague's butterflies and cars, and their placement on the page, indicated that his learning how to make them was most important to him. Sarah usually had a sense of order and balance to her finished product but when she was making her name of the first time this did not seem to be important. It was more important for her to find a space on the page in which she could work. Likewise in one of Erin's later sessions she continued to turn her paper in order to acquire space in which to make her growing inventory of letters. It was not until the fourth session with Erin that I asked her not "to scribble through it" but already four of her samples gave evidence of this. On another occassion Erin had presented the letters she knew how to make. She then made a human figure on top of this as though no other markings existed on the paper.

As mentioned before the children often changed their intentions and their interpretation of the markings that were made. This also indicated that their immediate involvement was more important than their final result.

Karl also delighted in the magic of having his representations mysteriously emerge from the page. In the second session he enjoyed his scribbling and appearance of Stone Crystal's buddy - "There is comes!...Aw, ready for

Stone Crystal? A buddy!" Erin experienced this sensation when through her telling of stories she was able to see pictures spring from the page. Their excitement and involvement was intense.

6. "Mistakes" were an avenue for learning.

Tyler, Sarah, Erin and Hague were aware of "mistakes" and in some way tried to cover them up. Tyler wanted to make triangles. Making the second one he said, "It's the wrong one" and tried to go over it first with the purple marker and then the black one. When Sarah realized she had not made her letters correctly she usually scribbled over them with ink. When she was doing the last sample she attempted to make an "S". Immediately she knew that it did not conform to the standard. Because we talked about it and because she could see the humor in the way she made the letter she did not scribble through it. She then made another one that looked like the conventional "S". Scribbling through something that Erin did not consider to be correct appeared to be an established pattern with her. She did so whether she was making letters or pictures. Erin's attempt to destroy some of her presentations might also be interpreted as an inability to match what she considered was an acceptable standard. Because Hague had been shown by the researcher how to make a butterfly he tried to copy that format. When his experimentation took him beyond what he considered appropriate he used his finger to smudge that which he had made. It appeared that if the children were concerned with making "mistakes" it was because they were not conforming to what was considered conventional; some standard imposed on them by someone else. They usually tried another experimentation at a later time. There was also no evidence to indicate that Karl and Nicole were concerned with the concept of "making a mistake".

7. Children asked for assistance if they could not figure out something on their own.

Whether the children were writing or drawing there were times when they did not feel that they could accomplish what they wanted and therefore asked for some assistance. There were also times when they just said they "didn't know how to do something" and did not choose to persue the matter. At first I was reluctant to give help and had to gauge each situation as to the merit of my assistance. Although Sarah had previously made many letters she had not yet made a "Y".

> I like writing letters (She giggled). Big "E"... and a big "Y" (She laughed). Hey, how do you do this? Oh, Oh, I think I'm gonna draw this one.

She did not receive help and therefore experimented on her own until she felt the result was satisfactory. Erin also had difficulty making the letter "Y" but she was not happy upon completion.

S: I got a "I" in my name too. Just a line like that?
R: Yeah.
S: Up? I start like that too.
R: Did you ask for an "I" or a "Y"?
E: A "Y".
R: Oh, that is different. That's a line like that but it has a line coming to it like this.
E: Like this?
R: That's right.
E: And like this?—
R: No, just one line.
E: I can do it more different. Have to do it. This is coming again, gonna eat em up. (With that she scribbled over it with black felt marker.)

The first time Nicole was going to write she asked, "I want you to spell my name just a minute. Could you do it for me?" She was encouraged to try on her own and tentatively she made marks on the paper. At first she was not convinced that it looked right but later confirmed that it was her name.

Both Karl and Hague asked for help when they were trying to draw; Karl with the rabbit and Hague with the butterfly and car. Karl managed to draw on his own but Hague needed a model in order to start with the butterfly. He was able to tackle the car with less assistance.

8. Experimentation was the most common way of learning as the children were involved in the "drawing" process.

As the children were busy with their "writing" or "drawing" experimentation was a major part of the process. Because Tyler and Karl began at the scribbling stage, their experimentation was evident in gaining control in their hand movements. For the others their experimentation expressed itself in changing, refining or adding detail to an original representation.

The samples of scribbles which Tyler produced gradually displayed an increase in control of his hand movements. In the last session he demonstrated much greater control than previously and tried in three instances to make a triangle. This did not turn out exactly as he expected but each time there was a variation on the one he had just completed. On the last page he again tried a triangle but it was much larger than the other ones.

Karl's experimentation was evident as he tried to gain control over his scribbles and in so doing gave them some form. During the fourth session he wanted to make a rabbit. He was hesitant at first but gradually made the head the body and the feet. The series of four drawings illustrated the changes that took place during one session. The same type of experimentation was evident as he tried to make a human figure. The later drawing included facial features and a hat.

Initially Hague's themes were human figures and windows. He made some changes in the facial features on the figures but a greater degree of experimentation was displayed in the way he went about making his window. At first it was a laborious task to put the lines together so that the end result looked like a window. By trying it five times, each time in a slightly different way, he was able to place one in the center of the page by using smoothly connected lines to do so. Having accomplished that he tried another one using a purple and black marker. Still later he made another one with the fine point marker which involved greater detail. Hague's work on the butterfly was more intricate than the window and required extreme concentration as he made the variations. Nine butterflies, made with varying degrees of control and exhibiting variation in form graced three papers. Hague was excited about the sense of accomplishment achieved through this experimentation and was willing to try a car after he felt he had succeeded with the butterfly.

The human figure was the dominant theme in Nicole's drawing. Variations occurred in the facial features, in the appendages extending from the head, in the shape of the head, in the feet, and in the size of the representation. The number of figures on the page ranged from one to five. It was interesting that after Nicole had made some extravagant variations, the final represention appeared very basic in comparison. It consisted of a head, two lines extending downward for legs, circles for the eyes and nose, two straight lines for the mouth, and two circles attached to the side of the head for ears. It was well proportioned and situated in the center of the page.

Sarah drew a number of different objects. One that occurred more frequently than others was a house. It basically maintained the same form but variations were evident from one to another. Sarah also enjoyed working with a variety of designs and ways of decorating a page.

Erin did not have a central theme running through her drawing. She produced a variety of lines and shapes and experimented in filling in areas with color in various ways. Several times she traced her hand and used that as a starting point for working with the marker. She did make four representations of a human and the greatest variation appeared in the facial features. In the later drawings she included a body, rather than just a head with legs attached.

9. Experimentation was also the major way of learning in the "writing" process.

Experimentation can be defined as the process whereby children make an attempt in order to find out and test. In this case children were trying to test the nature and boundaries of writing. Experimentation by the children revealed some of the principles which Marie Clay wrote about in What Did I Write (1975). The generating, recurring,and flexibility principles were evident in many of their "writing" samples as they had been in their samples of "drawing".

On Sarah's first sample she presented thirteen letters and two shapes. These same letters were repeated a number of times in subsequent samples. It was apparent that she felt some of the letters conformed to the conventional standard and that some experimentation was necessary to bring the others to that point. During the later sessions she added some letters to her inventory. On one page she made a "P" and decorated it. She wanted me to guess what it was and at that point called it a net.

Karl was not as advanced in his writing of letters as was Sarah. It was with a bit of apprehension that Karl made his first letters on the page. He seemed to have an idea what the letters should look like, but actually making the marks was a different matter. "You make two marks on things but it doesn't look like a 'K'". When he wanted to make an "r" he turned the paper and made a continuous line starting at the bottom. Not totally convinced he made the conventional mark he asked, "Does that look like an 'r'?" On the next page he made an "r" in a similar manner and also tried another "K". During the next session he tried to make a "P" and an "h". He found the "h" more difficult than the "P" and went about it very slowly and carefully.

Nicole's first writing represented her name. She went about it cautiously. She turned the page so that she had room to write. Her first mark looked like an upside down "U", the second like a "J", and the third and fourth were two lines which crossed much like an "X". She was not convinced that it was her name but said, "It starts with a 'N'". During the next session she also did some writing. It consisted of a repetition of lines and circles. She started at the center of the paper and worked toward the right edge. She then returned to the center and worked toward the left hand side of the paper again repeating the lines and circles. Upon completion she made a line at the bottom of the page and a circle beneath it. With that she stated, "That's all my writing". Repetition was prominent here as it was in the next three samples. Again she worked with lines and circles but the size, pattern and placement varied.

Erin's experimentation with the letter form was especially evident in the fourth, sixth, seventh, and eighth sessions. In session four she made a shape which resembled a "b" and followed with two variations which were partially closed and situated at an angle. A representation which resembled a "p" (an upside down "b") was also made on the page. In the sixth through eighth sessions not only did variations of the "p" and "b" appear, but also different forms of the "R" and "E". As the number of examples increased, closer approximations to the standard letter form was evident.

Three of the children indicated that their markings were numbers. Karl was experimenting with a fine point marker and in the process made a mark which resembled a "5". The same type of excitement as previously mentioned was involved because it was as if he discovered it by accident. When he tried to duplicate the "5" he was not sucessful. Instead he named it a car. In the second session Erin made some of her "homeworks". After she made a mark which resembled a backwards three she said, "What's that?...A three?" She named the next mark a "5". Nicole was in her third session which involved some writing. She had made a series of vertical lines and circles. "What does that make? Is that ten?"

10. Children had a sense of how to use the space on the page whether they were drawing or writing.

Most often when the children engaged in "drawing" they began in or near the center of the page. The singular compositions were usually centrally located. When the drawing consisted of more than one part, these were usually arranged in relationship to the central figure. Twenty of Nicole's thirty samples depicted the human figure. In the majority of these the person or persons were centrally located on the page. When she made a representation of her family, she was central and the other members were spaced evenly around her. Both Karl and Tyler's scribbles began in the center of the page. Those who were beginning to make letters often began at the center of the page and moved to the left. As their repertoire of letters increased they sometimes turned the page to fill any remaining space or turned the page and continued the line so that the letters stretched right across the page. Sarah, who had a large inventory of letters often started near the top on the left hand side of the page and continued down the page. She and Erin both drew lines across the page to give the sense of lined paper.

It was interesting that as Sarah was beginning one of the lines of her writing she made a blue dot and said it indicated "the start of the line".

In summary, several similarities were evident in the way the children went about "doing" their writing and drawing. Every child showed a special interest in the markers as an instrument for making marks on paper. The children were clear as to what they intended to do on the paper. The idea originated with the child. Some of the thinking which went into their "drawing" or "writing" was revealed through the talk directed to themselves or the researcher. Their level of concentration and sense of "hard" work indicates that they were serious about their task. Very often the process the child was going through was considered more important than the final product. "Mistakes" were viewed either as a stepping stone to further learning or a mark that had to be eradicated. Using their own background knowledge, the children experimented in making the marks on paper as a way of discovering more about the mode of communication. The placement of the marks on the paper indicated they had a good sense of how to use the space available.

Research question #2. What knowledge does the young child have about the nature of drawing and writing?

1. The young child understands that the marks on the paper represent something beyond themselves.

Tyler and Karl most clearly represented the scribbling stage in their markings. Both indicated early in their drawing that they were representing something. For Tyler it was a playground, a castle, a blast station, and a "T" for Tyler. On one sample Karl illustrated hair, Stone Crystal, Stone Crystal's buddy and a heart. Even though anyone else may not have interpreted their marking in the same way, the markings had meaning for them. As further development took place in their drawing they continued to name their representations. As Hague added hair to one of the human figures he said, "I'm bigger". He was comparing himself to the representation of his daddy.

Signs also stood for objects or concepts. In the first session Sarah indicated that one page was an "X and O game" and in the last session she wrote "X O X O" saying at the same time, "I'm doing X and O's because I love you". Karl represented Peter Pan by giving him a red hat. For him the hat was a distinguishing feature.

On occasion the children named the geometric shapes which they used. Sarah named a "tall skinny triangle" whereas Tyler talked about a "circle playground" and later made two "triangles". Hague also attempted to make two triangles. The established form of the geometric shapes did not appear to put constraints on the child's desire to represent.

From the adult point of view, the relationship between the symbol and referent gained in accuracy as the children advanced in their understanding of making marks on paper. This was not necessarily true for the children. Tyler's circular scribbles represented a circle playground for him, but an adult might not have understood it as such. Karl's accompanying verbalization indicated greater confidence that his first symbols represented the referent than those he produced later. Karl's butterfly bore resemblance to an adult's conception of a butterfly but his questions indicated his hesitancy as to the accuracy of the representation. With repeated use of the symbols all the children became more confident that the symbol represented the referent. Sarah was confident that her drawing of the house represented a house. When Erin began making letters she was not confident if the symbol actually represented the referent but as she, Sarah and Nicole increased their use of letters, the hesitancy decreased.

2. The children understood there was no "right way" to draw but that a conventional form was expected in writing.

The children saw in drawing a greater degree of freedom and less of a sense of "the right way to do things". While most of the children engaged in this freedom there were two instances which indicate a deviation. Karl freely engaged in drawing throughout his sample except for the fourth session when this conversation indicated a bit of hesitancy.

> K: I don't know how to make rabbit feet. I want rabbit feet.
>
> R: I don't think I know how to make rabbit feet.
>
> K: Probly because you have to make lines.

Karl went on to make the representation of the rabbit. In order to help Hague visualize a butterfly the researcher asked, "Did he have wings?" Hague's reply was "Yeah, but I don't know how to make his wings". Once he "knew how" he readily made a number of variations on the first one. This situation was not the normal drawing situation in which the child determined what would appear on the paper.

The changes which the children made were from a drawing to another drawing, from a drawing to a letter or from a letter to a drawing, but not from a letter to another letter. The children making letters perceived that letters had conventional form.

3. The children understood that letters had a name.

Karl, Nicole, Erin and Sarah were in the various stages of making letters. There were times when they would make a letter and then ask, "What is it?" Karl made a letter similar to a letter "E" and then asked, "What letter is that?" On her first page Erin made three letters. She named the two "E's" correctly but was not as certain of the third letter.

E: What's that letter? M?

R: Hm Hm, That's right.

E: Then what does that say?

R: What do you think it says?

E: M - E - B

M - E - M - E - E - M - Y don't you do anything? (She paused between each letter questioningly and then laughed at the end of her question.)

4. The children understood that a letter or a group of letters could represent their own name, another person's name, or a word.

During the second last session Nicole attempted to write her own name. Many of the letters she put on the paper were ones that are found in her name. Tyler clearly indicated that the letter stood for a name when he said, "T for

Tyler". From the outset it was apparent that Sarah knew that the letters of her name were her own personal sign.

After Nicole had made a series of vertical lines and circles, her second attempt at writing, she repeatedly asked, "What is it?" On the next page she again made lines and circles but was baffled as to what they said. The conversation following revealed that she was more convinced the markings should represent a name.

N: Is that ten?
R: It looks like ten to me.
N: But what, but what does, whose name is it?
R: It's not my name. Is it your name?
N: No. No? I think it says Judy.
R: Judy. I see. So it doesn't say your name?
N: That says Linda.
R: Says Linda. Oh?
N: That why I put, that why I put a line there in it.

The preceeding illustrates that letters in combination represent a word. In this instance it was meant as a sign for a name. Even though Nicole had initially asked about individual letters a group of markings took on new meaning. A crossover between number and letter is also evident.

Two of the girls also gave meaning to a collection of letters. Erin often referred to the making of letters as the making or doing "homeworks". One time when she was doing a large number of her "homeworks" on the page she said, "I can do much, do most little words". In the second session Sarah also said she was "gonna make words" and then redefined her intention saying, "These are not gonna be words but alphabets". Sarah also indicated that a word had length and that it was composed of a number of letters. When she was trying to write "giant" she said, "I need another one...another letter".

5. The children understood that correct spelling of the word allows the message to be received as intended.

Three of the children used the word "spell". Nicole said, "I want you to spell my name just a minute". Erin explained how to spell her name as she took a paper and began "writing" her name. As Sarah tried to present her message on the postcard she too asked, "How do you spell it?" It was important to her that if the message was to be received, it must also be spelled correctly.

6. The children understood that writing was something that adults do while drawing was more natural to them.

Their primary mode of communication on paper was drawing and letter making. Putting letters together to form words corresponded with the advanced understanding of writing. They saw a difference between this and the writing which the researcher did. Hague, Nicole, Erin and Sarah all referred to or questioned the researcher about the writing being done. Nicole asked the researcher to write for her saying," I can't know how to write".

Young children have a knowledge about the nature of writing and drawing. To summarize, young children understood: that the marks on paper represented something beyond themselves, that there was no "right way" to draw but that writing followed a conventional form, that letters had a name; that a letter or group of letters stood for their own name, another person's name, or a word; that correct spelling was necessary to convey a message, and that writing was something adults did whereas children most often drew or made letters.

Research questiions #3. At what point and in what manner do children differentiate between drawing and writing?

Given a set of markers the children were asked to make marks on the paper. All the children but one produced samples of what adults would call both "writing" and "drawing". Hague could not be persuaded to produce a sample of writing. All of the children knew that there was a difference between the two. Most of the children, when given the marker, began by "drawing" on the paper. Sarah was the only child who began by writing her name. She called it "a picture of letters" and on the same sample decided to make "a picture down here, a really picture". Initially only Sarah and Erin made letters on their own without being prompted to do so. Nicole had not been asked to write when she, on her own initiative, introduced the idea of "writing" by saying, "I want you to spell my name just a minute". Without demonstration, but with encouragement from the researcher, Nicole started. It was obvious from the tentativeness with which she made the marks on the paper, and from the awkward appearance of the marks themselves, that she had not made letters on her own very often previous to this.

If after a number of sessions the child had not yet produced any writing they were asked "to write for me". Some of the children continued to draw without realizing the significance of the request while others immediately realized that they were being asked to make a change in their representation. Close observation of the child determined when it was again appropriate to ask for a writing sample. This produced a response of writing or an explanation why the child was not willing to write. Some of the children said, "I don't know how to write" but for others writing was something with which they were familiar.

When asked to "write" there seemed to be a change in orientation. Sometimes the change from drawing to writing meant beginning on a new sheet of paper or allowing time to lapse. At one session Nicole was asked to write but continued making a person as she had been doing. She then took a clean piece of paper and began making lines and circles for letters. In the next session she was again asked to write. This time she made two drawings of a human before she made the first indication of a letter. It was in combination with a drawing of a human. When asked what the mark represented she did not give it a letter name. She made lines and circles on the next paper but was not sure of what she had made when she had completed them. She usually took time to adjust to the idea that she was writing rather than drawing. Although three of the children said they could not write they eventually attempted to do so.

Tyler had not yet been asked to write when he volunteered his "T for Tyler". When asked if he could write anything else he responded in the negative. When Hague saw the researcher writing his name, he did not agree that that was what was being done. When asked to write he avoided the question. At one point the researcher asked him to have his parents show him how. Returning to the next session he reported, "I try-did to but now I can't". It was definite at this point that Hague saw writing as an impossible task.

The children frequently used the terms "make" or "do" instead of "write" or "draw". Tyler did not use the terms "write"and "draw" at all. Hague used "draw" on one occasion and when asked, indicated that the researcher was "writing". Karl used "color" on several occasions, used "draw" four times and used "write" three times. Although the girls used "make" and "do", they used "draw" and "write" more frequently. It would appear that as the children expanded their variety and number of representations, and as they moved beyond the scribbling stage into the "writing" stage, their use of the words "write" and "draw" increased.

Karl was the only child who gave actual evidence that there is a point at which children differentiate between writing and drawing. He discovered letters in the scribbles he had made. Karl had made a watch but in observing what he had done asked, "What is that number? 'R'?" Looking more closely he became more excited when he found a "K" but immediately said, "I don't know how to make a 'K'." On the next page Karl attempted to make letters but concluded, "It's hard". The criteria he used was the similarity to recognized alphabet forms. The recognition of the alphabet letters was acquired prior to the current production of the letters.

This study confirms that there is evidence that children differentiate between writing and drawing but sites only one specific incident where a child actually made the differentiation and in so doing, used the recognized number and alphabet forms as the criteria.

Chapter Six

Summary

Overview

The concluding chapter summarizes the study, presents the major findings of the study, gives suggestions for future research and implications for teaching.

Summary of the Study

The purpose of the study was to examine the symbolizing of young children through the medium that adults indicate to be writing or drawing. The research questions were: (a) What is the nature of the similarities and differences in the way young children go about "doing" drawing and writing?" (b) What knowledge does the young child have about the nature of drawing or writing? (c) At what point and in what manner do children differentiate between drawing and writing?

Subjects of the Study

Six children, three boys and three girls, from a day care class of four-year-olds were the subjects of the study. These children were selected out of a total class population following six three hour observation sessions of the entire class. These children were seen as eager to "make marks on paper" but not wholly involved in "drawing the alphabets".

Data Gathering

Initially all of the children met with the researcher in order to become aquainted with the room, and to be informed of the procedure of the study as well as the expectations of the researcher. The use of the audio-tape was demonstrated.

Following this the children met with the researcher individually. Upon arrival they were given a standard size sheet of blank white paper and three colored markers. The children started on their own. They had access to an unlimited supply of paper.

The researcher's role was that of observer and responsive audience to the child. The audio-tape recorded the verbal communication during the entire session, while the researcher took notes to record the non-verbal communications and actions. The children's samples were labelled and collected as they were completed.

The analysis procedure was inductive. It involved studying the samples of the children, the transcripts and the observation notes taken during each session. Case studies were written for each child. From the preceeding information common themes emerged.

Conclusions

The study entailed the observations of six children on an individual basis. On average the sessions lasted eleven minutes. Each child came for three to ten sessions yielding a total of one hundred and nineteen samples. The sample was not large and the study was not extensive in length but as Donmoyor (1980) (quoted in Eisner) states, "Generalizability is possible because of the belief that the general resides in the particular and because what one learns from a particular one applies to other situations subsequently encountered" (1981, pg 7). A number of conclusions can be drawn from the study. They along with their related questions and the theoretic implications are presented in the following section.

Similarities in the "Doing" of Writing and Drawing

Research question #1. What is the nature of the similarities and differences in the way children go about "doing" writing and drawing?

Discussion

The present study revealed that there were at least nine similarities in the way children went about doing "writing" and "drawing".

1. Children explored the possibilities of the writing/drawing instrument.

Children investigated the markers to determine if they had a smell, and to see what they could do besides making marks on th paper. If extra pressure were applied to the markers a tiny pool of ink was left on the paper. They soon found the markers could roll and be attached end to end. The introduction of thin markers led to detailed drawings and an assumption on the part of the child that this meant he or she was to write. This supports Harste, Burke and Woodward's (1984) study which indicated that three year old children usually knew a pen was used for writing. At times the child became so involved in the drawing process that the marker took on the characteristics of the object he was representing. This data substantiates the findings of Gardner's (1983) theory of "waves" of symbolization. As Karl was drawing a rabbit his marker began to hop across the page like a rabbit. At another point he did not distinquish between the hair and the marker and cautioned the hair/marker to "calm down".

2. Children varied in the way they determined what was drawn or written.

The children very often indicated what they planned to do by stating, "I'm going to...". At times they went about their task with purpose and only on completion or when asked revealed what they were representing. Sometimes the subject matter was their surroundings but more often the children came prepared with an idea of what they would represent. Lowenfeld and Brittain (1975) maintained that the only motivation the child needed was proper materials and the encouragement to begin. Some children changed what they intended to represent as they were involved in the process. Some began with making letters and changed to drawing, some with drawing which took on an alternative form and some started with drawing and eventually changed to making letters. This concurs with Lowenfeld and Brittain's belief that art is a natural form of learning and within the child there is a need to represent the environment with which he comes in contact. Although the child may start with some idea of what he is going to do, he is also influenced by what he has already represented on the paper.

3. Some of the children's thinking was conveyed through the talk which accompanied their activity.

The amount of talk produced by the child was affected by several factors. The level of familiarity with the researcher was a factor with all the children but probably the most pronounced with Hague. Chomsky (1972), Gentrey (1981), and Haas Dyson and Jensen (1981), found that a trusting atmosphere encouraged the experimentation of the child's own knowledge of letters and sounds in the writing process. Lowenfeld and Brittain (1975) also found the positive attitude on the part of the teacher was vital to the drawing process. Hague did not write but the trusting atmosphere increased his verbal communication and willingness to experiment with drawing. Some of the children did not wish to speak while concentrating on their task, but talk appeared to aid others in the process. Some talked about what they were doing; even to the point of story telling, whereas the conversation of others focused on everthing but what they were doing. Graves (1978), Haas-Dyson (1981), Haas-Dyson and Genishi(1982), and Lamme and Childers(1983) found that talk was an aid in the writing process. Their studies and the present one do not address the purpose of talk totally unrelated to the task at hand.

4. The children went about their "hard work" with a high level of concentration.

Not only did the children state that it was "hard work", but the time dedicated to the task and the amount of attention given to their detailed drawing and writing indicated that they were serious about their task. The amount of effort and concentration expended on the activity indicated that the children's concept of the importance of the activity concurs with that of Richardson (1948) when she stated that the children's work was more than "mere scribbles".

Giacabbe (in Graves, 1983) also acknowledged that children's writing was purposeful and concluded from her study that grade one children felt they could write and wrote for the sake of writing.

5. The process in which children were involved was often more important than the final product.

At times the children were so intensely involved that they scribbled over their former representations as though they did not exist. Sometimes in the frenzy of making a new discovery they did not follow their former evidence of understanding in use of space, balance, or directionality. Their excitment and involvement was all encompassing. This is supported by Harris (1963) and Kellogg (1969) who saw this as part of a stage in artistic development and by Brittain (1979) who clearly saw the child engaged in the process rather than in production of the product.

6. "Mistakes" were an avenue for learning.

When the children made a representation which did not conform to that which they considered appropriate, they usually scribbled through it or smudged it in some way. Usually their "mistakes" were followed by other attempts to more closely resemble the conventional idea of what their representation should be. King and Rentel (1979) also considered correcting as part of the learning process.

7. Children asked for assistance if they could not figure out something on their own.

If the children came upon a letter with which they were not familiar, and therefore unable to represent, they readily asked for help. Piazza and Tomlinson (1985) found children would readily ask their peers or the researcher, while Giocobbe (1981) found a reasurring response from the researcher in answer to the questions allowed the children to proceed.

8. Experimention was the most common way of learning as the children were involved in the drawing or writing process.

Experimentation was evident in the different ways in which the children made representations on paper: scribbling, controlled scribbling, preschematic representations, schematic representations, initial attempts at letters, numbers and names. This substantiates studies by many other researchers who used varied terms to describe the process: Clay (1975) - flexibility, Willats (in Tauntan, 1984) and Gardner (1980) - problem solving, Smith (1983) - modification of design, Harste et al. (1984) - generativeness and risk-taking, and Newman (1984) - experimentation.

9. Children have a sense of how to use the space on the page.

When children engaged in drawing their representations were usually centrally located or arranged in a balanced formation on the page. As their inventory of letters increased, a linear formation from left to right eventually resulted. These findings concur with Brittain (1975), Clay (1975), and Goodnow (1977), who saw children gradually gaining an understanding of the use of space on the paper.

Children's Knowledge of Writing and Drawing

Research Question #2. What knowledge does the child have about the nature of drawing and writing?

Discussion

1. The children understood that the marks they made on paper represented something.

This study indicated the following areas of understanding.

Whether the children were at the controlled scribbling stage or the schematic stage, they understood that their markings represented objects or concepts. Langer (in Gardner,1982) referred to symbolizing in pictures as presentational, and symbolizing in words as discursive. Studies by Yardley (1970), Gardner (1976, 1980, 1982, 1983, 1985), Clay (1975), Eisner (1976), Brittain (1979), and Matthews (1984) all deal with the symbolizing of children as they attempt to represent their environment through drawing and/or writing. The illustrations and narration of the children indicated that their scribbles, lines, letter formation, and groups of letters represented their own understanding of their world.

2. The children understood that there was no "right way" to draw.

Most of the children experienced a sense of freedom while they were scribbling and drawing. Whether they were making "a circle playground", Stone Crystal, "the old woman in the shoe", a human figure, or a house, the children did not operate under the assumption that they had to conform to some conventional standard. Lowenfeld and Brittain (1975) pointed out "although parts may have some intent as they are being drawn, the child has no preconceived notion as to what the finished scribble will look like" (p. 130).

3. The children understood that letters have a name.

As children made a letter they would name it, or they would make a letter and ask, "What is it?" Haley-James (1982) says that, "through sign on stores, names on products, television commercials and books," children build up a low-level awareness of sound and symbol relationships. Using what they already know, they ask for help with other letters (p.462). Haas-Dyson (1983) also indicated that young children were aware of how letters looked (p.19).

4. The children understood that a letter or a group of letters could represent their own name, another person's name, or a word.

Tyler and Karl both used a single letter to represent their name. Sarah and Erin both knew the sign for their name and Nicole, after initial experimentation, recognized a group of letters as a sign for her name. Clay (1975) states that it is only a rare child that learns any other words before attempting to write some of his own name. Haas-Dyson (1981) citing Ashton-Werner (1963) refers to these words with special meaning as "key words". As their inventory increased, the girls also began to put the letters together to form what they understood to be words. Studies by Chomsky (1972), Gentry (1981), Giacobbe (1981),and Haley-James (1982) indicated that children use the letters they know to create words.

5. The children understood that correct spelling of the word allowed the message to be received as intended. Three of the children were concerned about correct spelling. Sarah made a postcard. She wanted the words to be spelled correctly because she knew that a message would be conveyed through her words. According to Clay (1975), Haley-James (1982), and Newman (1984) children understand writing is a means of communication and studies by Gentry (1981) and

Giacobbe (1981) verify the initial stages children go through in order to spell words correctly.

6. The children understood that writing was something adults did whereas drawing and making letters was their most natural mode of written communication. The children often said they were going to "make" something or "do" something. The result was usually marks which resembled drawing or writing. Their early stages of representation involved scribbling. The later marks were either drawings which depicted their surroundings or lines which represented letters or numbers. All the children but one made a drawing for their initial representation.

Although the children did not readily refer to their own work as writing, they often asked the researcher, "What are you writing?" This concurs with Haas Dyson's (1982) findings which indicate that children understood writing in the context of adult writing.

Differentiation of Writing and Drawing

Research questions #3. At what point and in what manner do children differentiate between drawing and writing?

The study indicates that there is a point at which differentiation takes place and that recognition of the alphabet letter forms aids in this differentiation.

Discussion

All the children except one produced samples of writing and drawing and all the children knew there was a difference between writing and drawing. There was only one incident in this study which actually indicated a point of differentiation. With excitement, Karl discovered letters in the scribbles he had made. Because he knew what the letter (the first letter of his name) should look like, he distinguished it from the drawing. He was convinced he did not know how to "make" a "K", but tried on the next page. This finding concurs with a study by Haas-Dyson (1983) where she suggests that "writing develops from a form of drawing (a graphic representation) to form a language (specifically, an orthographic representation). Initially, children focus on the most concrete, the most obvious aspects of writing-its graphic form" (p. 18-19). Lamme and Childers (1983) also found that children discovered isolated alphabet letters in their drawing.

Future Research

This study, conducted during the same time frame as others dealing with writing and drawing, concurs with some of their findings. The present study also indicates that further study would increase the knowledge base giving greater insight into the learning of young children as they give expression to it in writing or drawing.

In this study the children met with the researcher on an individual basis. Lamme and Childers (1983) indicated that social interaction was a contributing factor in the production of writing and drawing. In future studies a group of children is recommended in order for this interaction to take place.

Tyler and Karl were in the scribbling stage. A study involving a greater number of children at this stage may give greater insight into the question, "At what point and in what manner do children differentiate between drawing and writing?" Would children in this stage use the words "draw" or "write" more often than "make" and "do"?

The primary instrument used in this study were colored markers with tips of approximately .5 centimeter thickness. After a few sessions markers with ~~a~~ thin point were introduced. A study using a pencil or a marker of one color may cause the children to focus more on the task of writing and drawing than on the possibilities of the markers. Variations of the instrument such as the use of a brush may produce different results.

Although the talk of the researcher was limited, the children were questioned with the intention of encouraging writing. A study of an extended time period with less focused questioning may produce other results.

Gardner speaks of the interaction of the symbol systems. Preliminary activities such as music, dance, and storytelling prior to the sessions may result in stimulation of imagination and allow the children to produce varied results. The study explored the relationship between drawing and writing. Other studies exploring the relationship between other symbol systems might also be undertaken.

Teachers as researchers would reveal the most pertinent information about children's drawing and writing activities because they would be able to observe spontaneous results. The children would also be familiar with them and not have to deal with the hesitancy to produce a sample for someone with whom they do not feel comfortable.

Implications for Teaching

The present study indicated that children have a broad knowledge base in the area of representation before they enter school and much of it has been acquired through their observation and experimentation. Those responsible for the administration and teaching in the day care, Early Childhood Services programs, and primary grades would benefit from close observation of the children in order to determine what they already know, rather than planning the curriculum on assumptions of children's knowledge. This observation would have to be on-going in order to determine what the child knows, rather than what the child does not know.

Sarah, at four years of age, had an adequate knowledge of the names and formation of the alphabet letters. It would be unnecessary for her to sit through the teaching of letters as they were individually presented on a daily basis. This continues to be the practice in some grade one classrooms. Sarah and Erin already had an understanding that a combination of letters made words and all three girls understood that words had to be spelled correctly in order to convey a message. Considering this knowledge was evident at four years of age, writing their own stories during their kindergarten year and at the beginning of grade one would be necessary to enhance their own motivation in writing.

This study indicates the importance of operating with an attitude of trust in the child, because children have a desire to redefine and experiment with their markings in order to reach the accepted convention. Some children already know what the alphabet letters look like. Erin had an idea of what the letters looked like and continually experimented with "d", "b", "r", and "p" until she felt they were made correctly. Readily available paper and markers would allow for this experimentation. Since other studies have found that social interaction fosters ideas and representations, a permanant center or table equipped with supplies, large enough to provide working space for a number of children, would serve well. The teacher or facilitator would have to allow for an increased noise level and adequate time for the children to be involved in their drawing and writing. The audience for their work would include the children as well as the teacher or other significant adults. An accepting attitude of the children's experimentation in drawing, writing and spelling would encourage them and allow them to ask for help when necessary. The response would normally be verbal, but as the children became more involved in making letters, a written response would also serve as a demonstration. When ready, the children could be encouraged to affix their own "sign" to identify their papers. Regardless of the stages of representation, opportunity provided for the children to share what they have made or written would provide needed audience feedback. This should take place during and after the writing process. Continuing this practice into grade one will enhance the writing and reading experiences.

Gardner talked about the interaction of the symbol systems. Experiences in drama, art, dance, and music would serve to enrich the children's background knowledge and provide for a variety of modes of expression. Opportunities which would encourage children to symbolize in as many ways as possible would allow them to understand each symbol system fully.

In-service sessions available to teachers and parents outlining and discovering what the preschool child already knows may create a greater understanding of the child and the current teaching methodology. It may also encourage the teacher to risk and adopt more of the methods which seek to incorporate the child's own experiences in their learning.

Efforts must be made on the part of all educators to determine what the child knows prior to school entry. The home visit, currently practiced by many kindergarten teachers, allows the teacher to become acqainted with the child's envolvement with literacy in the home. An awareness of this family literacy will provide the teacher, at any grade level, with the necessary information for working with the child.

In-service with all school personnel to encourage appropriate positive response to children's representations will serve to inform adults of the capabilities of the children at all levels, and in the long term, will increase student self-esteem and improve school atmosphere through a greater understanding of one another.

Summary

This chapter included a summary of the study, the conclusions and theoretic implications, suggestions for future research and implications for teaching.

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